MAR 1 1988

A93.44: AGES 871216

United States
Department of
Agriculture

Economic
Research
Service

Agriculture
and Trade
Analysis
Division

Government Intervention in Canadian Agriculture

Carol A. Goodloe

COMPLETED

GOVERNMENT INTERVENTION IN CANADIAN AGRICULTURE. By Carol A. Goodloe. Agriculture and Trade Analysis Division, Economic Research Service, U.S. Department of Agriculture. Staff Report No. AGES871216.

ABSTRACT

Canadian Government intervention in agriculture is measured for 1980/81-85/86 using producer and consumer subsidy equivalents (PSE's and CSE's). PSE's were highest for dairy and sugar. CSE's were most negative for dairy products and poultry. PSE's for western grains and oilseeds were moderate, on average, but had high growth rates. Producer support for corn, soybeans, beef, and pork was low and stable. A weighted average PSE for all commodities during the 6-year period was about 25 percent, meaning government support accounted for about a quarter of the value of agricultural production. For 1986/87, producer support is estimated to have increased most significantly for western grains and oilseeds as the Government has instituted new programs or modified old ones in response to falling world prices.

Keywords: Agricultural policy, agricultural trade, Canada, consumer subsidy equivalent, government intervention, producer subsidy equivalent.

ACKNOWLEDGMENTS

The author thanks Nicole Ballenger, Cheryl Christensen, Bill Coyle, John Dyck, Michael Lopez, and Mary Anne Normile for their helpful review comments, and especially Renata Penn for finding numerous spreadsheet errors. LaMoin Evans provided clerical assistance.

This report was reproduced for limited distribution to the research community outside the U.S. Department of Agriculture.

1301 New York Avenue, NW.
Washington, DC 20005-4788

January 1988

PREFACE

The United States and other parties to the General Agreement on Tariffs and Trade (GATT) are participating in an eighth round of multilateral trade negotiations (MTN). The negotiations were launched in Punta del Este, Uruguay, in September 1986 with the signing of a ministerial declaration. Agriculture will receive notably greater attention in this process than ever before.

The prominence of agriculture in these negotiations is related to current problems in the international agricultural trade environment. During the seventies, world agricultural trade expanded, and the U.S. share of the market increased at an unprecedented pace. In the eighties, these trends reversed. Growth in world agricultural trade essentially stopped, and U.S. exports dropped more than a third. Both U.S. and other countries' farmers have faced declining agricultural prices and asset values.

Many factors account for the current agricultural market conditions and the agricultural policies of trading countries contribute significantly to these factors. Trade barriers and domestic agricultural policies insulate agricultural producers in many countries from international competition and discourage downward supply adjustments. Consequently, world supply has grown faster than demand, depressing world prices. As agricultural market conditions have worsened, many countries' dependence on trade barriers and price and income support programs has increased further. While these programs do protect farmers, they are extremely costly to taxpayers and to food consumers. Limited opportunities for expanding world agricultural trade in the eighties have also heightened tensions among trading partners and competitors over the use of such policy instruments.

Bilateral agricultural trade disputes, often involving GATT panels as arbitrators, have proliferated since the last MTN ended in 1979. Because GATT rules on the use of trade barriers are loosely worded or are lenient on policies restricting agricultural trade, these rules have proved inadequate for resolving disputes. This situation provided a major impetus for the call by the United States and other agricultural exporters for a new MTN round.

Negotiations on agriculture will be difficult and their outcomes are difficult to predict. Many countries have a strong interest in reaching an agreement that would improve the functioning of world agricultural markets by limiting the ability of any one country to restrict trade opportunities. Reaching such an agreement requires extensive knowledge on the part of all MTN participants of each other's agricultural policies and of the potential effect of these policies on trade. Quantitative measures of government intervention in agriculture and how different policies have affected producers, consumers, and taxpayers are required to assess distribution of costs and benefits associated with trade liberalization.

Research underway at the Economic Research Service (ERS) builds and expands on similar work initiated by the Organization for Economic Cooperation and Development. Research at both institutions is directed at measuring levels of agricultural intervention and assessing the impact of alternative forms of trade liberalization on world agricultural trade and domestic agricultural sectors. A key component of both research efforts is a measure of government intervention known as producer and consumer subsidy equivalents (PSE's and CSE's). PSE's and CSE's allow many different kinds of government programs to

be combined into a standardized measure that provides a yardstick of government intervention.

This report is one of a series of reports resulting from ERS's trade liberalization project. An earlier USDA report, Government Intervention in Agriculture (FAER-229, April 1987), is based on estimates of PSE'S and CSE's for the principal farm commodities in the major agricultural producing and trading countries. The series of country/regional reports, of which this report is one, reviews domestic agricultural and trade policies and presents more detailed information on PSE's and CSE's. The estimates of PSE's and CSE's are also being used as inputs into commodity/country models to assess production and trade impacts resulting from removal of government support. Forthcoming reports will present results of these evaluations.

CONTENTS

	Page
SUMMARY	vii
INTRODUCTION	1
CANADA PROFILE	1
Agricultural Sector	1
Economic and Agricultural Policy Goals	2
AGRICULTURAL PROGRAMS	4
Marketing and Transportation Policy	5
Price and Income Stabilization Programs	6
Supply Management Programs	7
Other Programs	8
Implications of Agricultural Programs	8
MEASURES OF GOVERNMENT INTERVENTION IN CANADIAN AGRICULTURE	9
Commodity and Policy Coverage	10
Calculations of PSE's and CSE's	12
Trends in PSE's and CSE's in the Eighties	23
Sources of Producer Support	28
Other Estimates of Producer Support	30
Impacts of Trade Liberalization on Canada	31
CONCLUSIONS	32
REFERENCES	34
APPENDIX 1: PSE/CSE METHODOLOGY	36
APPENDIX 2: DATA AND SOURCES USED TO CALCULATE PRODUCER AND CONSUMER VALUE	39
APPENDIX TABLES	43

SUMMARY

One of the major U.S. objectives in the eighth round of multilateral trade negotiations (MTN) is to liberalize agricultural trade, and to that end, the United States has called for the gradual elimination of agricultural protection and subsidies. Canada is a strong supporter of the new MTN round because both its general economy and agriculture are highly dependent on exports.

Canada has a wide array of programs and institutions affecting agricultural commodities. Programs focus on specific commodity groups, such as grains and oilseeds, red meats, and dairy and poultry. The objective of many programs is to stabilize prices or incomes. Programs include transportation subsidies, price and income support, supply management, and subsidized credit and inputs. Marketing boards that regulate production, pricing, and marketing of many commodities are a distinctive feature of Canadian agriculture. Provincial governments also play a significant role in farm programs.

The level of government support to (or taxes on) producers and consumers is measured by producer subsidy equivalents (PSE's) and consumer subsidy equivalents (CSE's). These measures include policies that result in budget outlays (such as stabilization payments and input subsidies) and policies that do not (such as tariffs and import quotas).

PSE's for most commodities increased during 1981-86. PSE's for Canada's most important crops--wheat, barley, and rapeseed--were moderate, averaging less than 25 percent of the value of production, but had high growth rates. Transportation subsidies were the main source of support. The dairy PSE was the highest, on average, although the rate of growth was low. Both total government support and support per ton were highest for dairy. PSE's for corn, soybeans, beef, and pork were low and stable, averaging 10 percent or less. The PSE for poultry peaked in 1982/83, falling thereafter because changes in the U.S.-Canadian exchange rate reduced the price gap between U.S. and Canadian poultry prices, thus lowering the primary source of producer support. The PSE for sugar was the most variable and had the highest rate of growth. A weighted average PSE for all commodities during 1981-86 was about 25 percent, meaning government support accounted for about a quarter of the value of agricultural production.

CSE's for crops were low; the weighted average PSE was -10 percent. Few programs directly affect consumers of grains and red meat. Poultry consumers are taxed by the higher prices that result from the supply management system. Most of the weighted average was accounted for by the dairy CSE. CSE's for dairy products were high and negative, meaning consumers of these products were taxed significantly. Consumers pay for most of the support to dairy producers through higher prices.

In 1986/87, producer support is estimated to have increased most for western grains and oilseeds. The Canadian Government has instituted new policies or modified old ones in a manner that benefits these commodities the most. Support under price and income mechanisms has now become most important. Most key policy changes since 1986/87 have been done in response to falling world prices and corresponding financial stress in the farm sector.

The level of government support indicates how producers of different commodities might fare if government subsidies were reduced and agricultural

trade liberalized. Canada would likely benefit from reduced world protection and subsidies for grains, oilseeds, beef, and pork because increased export revenue would more than compensate producers for loss of government support. Dairy and poultry policies limit competition through fixed prices and import quotas. If the border were opened to imports at world prices, substantial structural adjustment would follow. Consumers of these products would benefit from increased supplies and lower prices.

VI

Government Intervention in Canadian Agriculture

Carol A. Goodloe

INTRODUCTION

Canadian agriculture is highly regulated and government programs have had a significant role in the farm sector. Although Canadian agricultural exports have retained their share of world trade in the eighties, falling agricultural prices and declining asset values have taken their toll on Canadian farmers. As a result, government support of agriculture has grown in importance. This report provides detailed information on agricultural policies and the calculation of producer subsidy equivalent (PSE's) and consumer subsidy equivalents (CSE's) for Canada. These calculations allow one to examine changes in government support during the eighties. The report also provides other estimates of government support to agriculture and presents results of several studies that examine the effects of removing Government support from Canada's agriculture.

CANADA PROFILE

Canada, although a large country in area, has a population of only 25 million. Canada is the seventh largest market economy in the world and has an open economy, with the trade sector equaling over half of Gross Domestic Product (GDP). The Canadian economy is highly integrated with that of the United States; over three-fourths of Canada's trade takes place with the United States. Canada has a large resource sector--forestry, fishing, and mining, as well as agriculture--but manufacturing is also important.

Agricultural Sector

The agricultural sector is only a small part of the total Canadian economy, contributing less than 5 percent of GDP. Only 4 percent of the population live and work on farms. This percentage, however, varies greatly by province--from only 2 percent in the Maritime Provinces to almost 20 percent in Saskatchewan. Both the farm population and the number of farms have been declining since World War II.

Canada's cropland is small relative to its total size. Only 4 percent of total area is devoted to crops, with an additional 2 percent in meadows and pastures. Most crops are grown in the western "Prairie" provinces. Crop alternatives here are limited by a short growing season, little precipitation, and long harsh winters. Droughts are frequent, recently occurring in 1980, 1984, and 1985.

Wheat, barley, and rapeseed are the most important crops produced and exported (table 1). Canada has been the world's second largest wheat exporter over the past decade with almost one-fifth of the export market, although it produced only 5 percent of world wheat. Canada's role as world producer and exporter of coarse grains and oilseeds is less significant. Barley is Canada's most important coarse grain produced and exported. But over the past decade, corn production in eastern Canada has been increasing at a faster rate than barley. Canada is a significant producer and exporter of rapeseed, but rapeseed accounts for only a fraction of world production and trade of oilseeds.

Livestock production accounts for half the value of Canada's farm output. Cattle and dairy are the two largest sectors. Pork exports are significant, accounting for about a fourth of total livestock production in recent years. Canada both imports and exports beef. Most red meat trade is with the United States.

Although Canada produces a relatively small amount of total world agricultural output, it is a major agricultural exporter. During the eighties, agricultural exports accounted for about 10 percent of total exports and contributed a sizable share to the trade surplus (table 2). However, the agricultural trade surplus has declined recently because of reduced supplies and low prices.

Canada's cold climate means that many agricultural products cannot be produced. Fruits, vegetables, tropical products, rice, and cotton make up about half of Canada's total agricultural imports. Many of these imported products account for three-fourths or more of domestic consumption. The United States is the main agricultural supplier of these products. Canada's agricultural exports to the United States, mainly animal products, doubled during the eighties.

Economic and Agricultural Policy Goals

Canada, along with most other developed economies, tries to maintain steady economic growth, high employment, and low inflation. Because its economy is so closely intertwined with that of the United States, Canada must balance its interest and exchange rate policies with those of the United States. Canada

Table 1--Canada: Production and trade of major commodities, average 1984/85-1986/87

Item	Wheat	Coarse grains	Rapeseed
Production (mil. tons)	25.6	24.2	3.6
Share of world total (%)	5.0	2.9	1/2.0
Exports (mil. tons)	18.7	5.2	1.7
Share of world total (%)	17.9	5.1	1/4.8

1/ Share of total oilseeds.
Source: (23).

Table 2--Canadian exports and imports

Item	1981	1982	1983	1984	1985	1986
	Million Canadian dollars					
Total exports	81.3	81.8	88.5	109.5	115.9	116.6
Total imports	79.5	67.9	75.6	95.8	104.9	112.7
Net trade	1.8	13.9	12.9	13.7	11.0	3.9
Agricultural exports	9.3	9.3	9.5	10.3	8.9	8.4
Agricultural imports	5.6	5.1	5.2	6.1	6.0	6.6
Net trade	3.7	4.2	4.3	4.2	2.9	1.8
Total exports to U.S.	53.9	55.9	64.6	82.8	90.4	90.3
Total imports from U.S.	54.5	47.9	54.1	68.5	74.4	77.3
Net trade	9.4	8.0	10.5	14.3	16.0	13.0
Agr. exports to U.S.	1.3	1.6	1.7	2.2	2.4	2.7
Agr. imports from U.S.	3.3	3.1	3.1	3.6	3.4	3.6
Net trade	-2.0	-1.5	-1.4	-1.4	-1.0	-.9

Source: (3).

usually keeps its interest rates slightly above U.S. rates to prevent capital from moving south and pressuring the Canadian dollar.

The Canadian Government, regardless of the party in power, has played a major role in the economy. But with elections and a change in government in 1984 came a shift in economic priorities with more emphasis on the private sector and less on the Government. This shift came in reaction to Canada's poor economic performance during the late seventies and early eighties--severe recession, high unemployment and interest rates, and a weak currency. In addition, the government budget deficit has been growing in the eighties such that the ratio of the Federal budget deficit to GNP is one of the highest among developed countries. Expenditures on agriculture have likewise been growing and now account for about 8 percent of total Federal expenditures (fig. 1).

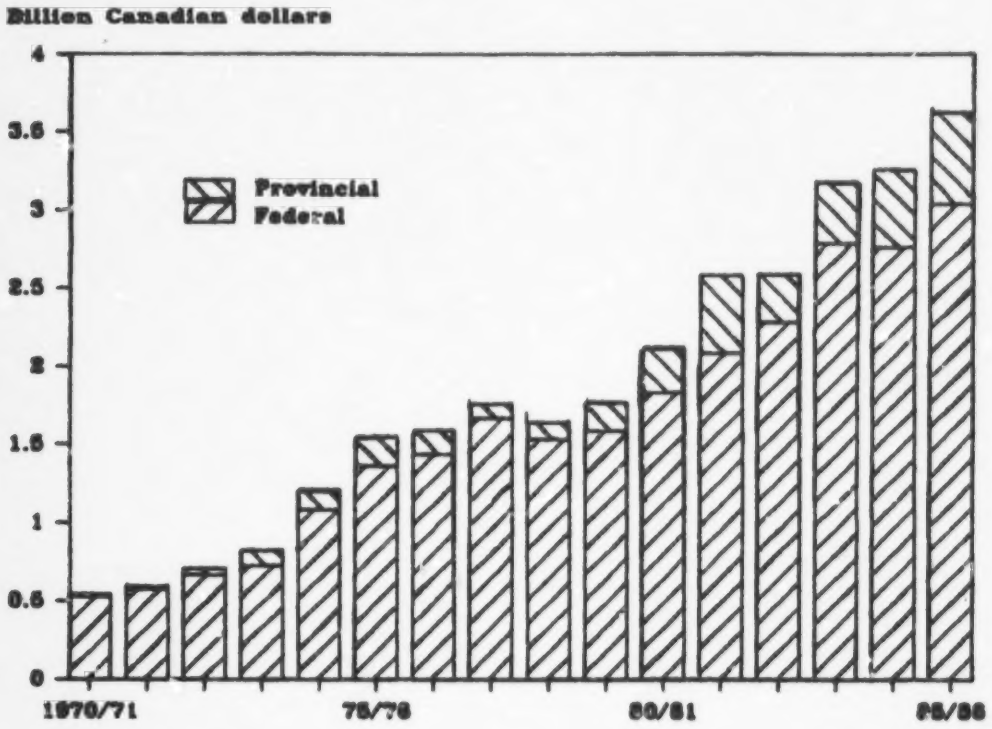
Canadian agricultural policy goals include maintaining adequate food supplies for domestic needs and exports, supporting farm income, and preserving the family farm structure. Policy measures in the eighties have aimed to address various problems in the farm sector, including the poor financial condition of many farmers, excess production capacity, and increased export competition.

Policy goals vary by commodity, depending on whether the sector is oriented toward the export or the domestic market. In addition, Canada's 10 provinces have considerable powers in formulating agricultural policy. Provincial policies of self-sufficiency have sometimes conflicted with national goals.

Canada has been a strong supporter of the new multilateral trade negotiations (MTN) because its economy in general (exports and imports are equal to 50 percent of GDP), and agriculture in particular, is highly dependent on exports. Canada has stated that agriculture is its highest priority in the

Figure 1

Canadian agricultural expenditures



new MTN round and particularly wants to see subsidy issues resolved. It feels it is caught in the middle of a U.S.-European Community (EC) agricultural subsidy war that is driving farm prices to unprecedented low levels. Canada's proposal to the General Agreement on Tariffs and Trade (GATT) calls for a reduction in trade-distorting subsidies and improved international rules for dealing with agricultural policies. Canada is a member of the Cairns Group of "nonsubsidizing agricultural exporting countries," a coalition of 13 countries whose aim is to liberalize agriculture trade fully.

The Government has sought closer economic ties with the United States and, to that end, initiated discussions with the United States in 1985 to establish "freer trade" between the two countries. In October 1987, the United States and Canada signed a trade agreement designed to remove many trade barriers. Several provisions deal with agriculture. The agreement calls for the elimination of agricultural tariffs between the two countries over a 10-year period. Other provisions deal with quantitative restrictions on Canadian imports of wheat, barley, oats, and poultry; some restrictions on U.S. imports of sugar-containing products; and beef imports on both sides. Under U.S. fast-track authority, the President signed the agreement on January 2, 1988. After the agreement is submitted to Congress, Congress then has 90 legislative days to accept or reject the agreement.

AGRICULTURAL PROGRAMS

Canada has a wide array of programs and institutions affecting agricultural commodities. Programs focus on specific commodity groups, such as grains and

oilseeds, red meats, or dairy and poultry. Programs cover such areas as marketing and transportation, price and income support, supply management, and credit and inputs. The objective of many programs is to stabilize prices or income.

Marketing and Transportation Policy

Marketing boards are a distinctive feature of Canadian agriculture. Marketing boards cover a wide range of commodities--from apples to wool. Products accounting for about half of Canada's farm sales are represented by over 100 such boards. Because the regulation of Canadian agriculture is a shared Federal-provincial responsibility, all but five of the boards are provincial. One Federal board regulates wheat, barley, and oats grown in the Prairie provinces, and the other four regulate manufacturing milk, chicken, turkey, and eggs produced nationwide. These five marketing boards function as state monopolies, regulating production, pricing, and marketing.

Canadian Wheat Board

The Canadian Wheat Board (CWB) is a state trading agency that is the sole legal exporter for wheat, barley, and oats grown in western Canada. The CWB also has a marketing monopoly on grains for domestic human or industrial use. The CWB operates a price pooling system. Each year, initial prices (guaranteed floor prices) are set for the different grades of grain in six pools--wheat, Durum wheat, feed barley, barley for human use, feed oats, and oats for human use. Initial prices are set conservatively in relation to anticipated world prices. If receipts from grain sales in a pool account are greater than the initial payment (plus handling and administrative costs) at the end of the crop year, a final payment is returned to producers. If the funds in the pool are not sufficient to cover the initial payment and other costs, producers receive only the initial payment. The Federal Government makes up the deficit.

The CWB controls access to the grain handling system through delivery quotas. Quotas are used throughout the year to regulate deliveries so that elevator congestion can be avoided and all farmers can receive equal delivery opportunities. Quotas are changed throughout the crop year depending on sales.

The CWB is authorized to make credit sales, generally for 3 years at commercial rates. Credit sales have been declining in recent years. In the early seventies, the CWB subsidized some wheat sales to Brazil and Algeria, and the Canadian Government paid the difference between the subsidized interest rate and the market rate. The program is no longer in operation, but the Federal Government will continue to make payments to the banks until the loans are paid in 1987/88 (10). 1/

Licenses are required for imports of wheat, barley, oats, and their products. The CWB controlled import licensing for these grains prior to 1985. The Ministry of External Affairs now controls the licensing of barley and oat imports, but the CWB still retains control over wheat imports.

1/ Underscored numbers in parentheses are listed in the References at the end of the report.

Transportation

Grain and oilseed exports are highly dependent on railroads because the major producing areas in western Canada are long distances from ports. The rail system is highly regulated and subsidized. Transportation subsidies for agriculture are a major Federal expenditure. They include: a subsidy on rail freight rates that is paid to the railroads; payments for branch line rehabilitation; and hopper car purchases and boxcar repairs.

The first significant change in rail freight rates since 1925 was made in 1984. The Western Grain Transportation Act (WGTA) replaced the previous freight rate structure established by the Crow's Nest Pass Agreement of 1897. The Canadian Government under the WGTA provides a permanent payment of Can$659 million to the railroads and also pays a share of railway cost increases. Producers are scheduled to pay an increasing share of railway costs, but recently this share has been limited by legislation.

Price and Income Stabilization Programs

Canada has several programs that work to support farm prices or farm income. These programs have become especially important in the eighties because falling prices and incomes have left many farmers in severe financial straits.

Western Grain Stabilization Program

The Western Grain Stabilization Program (WGSP) was implemented in 1976 and is a voluntary program designed to support net cash-flow for western producers of wheat, barley, oats, rye, rapeseed, flaxseed, and mustardseed. Producers contribute 1.0 to 2.5 percent of their gross receipts from sale of these commodities, up to Can$60,000. Levy rates have changed over the years, depending on the financial status of the fund. The Federal Government contributes $2 for every $1 paid by producers. Payments, based on deliveries of the seven crops, are made when either net cash-flow or net cash-flow per ton, whichever is larger, falls below the average of the previous 5 years.

Payments from the fund were infrequent prior to 1984, but substantial payments have since been made. Following large payments in 1985/86 and 1986/87, the fund is now in deficit by approximately Can$1.5 billion. The Government is looking at ways to relieve the financial pressure on the fund, possibly by raising producer and Government levies. Large payments are likely for another year or two before low prices reduce the 5-year average that triggers payments.

Agricultural Stabilization Act

The Agricultural Stabilization Act (ASA) provides price support for certain "named" commodities: wool; industrial milk and cream; corn; soybeans; and wheat, oats, and barley grown outside the designated area of the CWB; and cattle, hogs, and lambs. (Dairy payments are made under the ASA, but the dairy program operates under another authority; it is described below.) Other commodities, mainly horticultural commodities, may also be "designated" for support.

A support price is at least 90 percent of the the previous 5-year average market price, adjusted by the difference between average production costs in the current year and average production costs in the previous 5-year period. The support price is used to determine the size of deficiency payments if the

market price falls below the support price. Recent payments to producers of products other than industrial milk and cream have been infrequent.

The ASA was modified in 1986 to allow voluntary tripartite stabilization programs. The Federal Government, provincial governments, and producers may contribute equally to a fund that makes payments to producers when market prices fall below established support prices. Support prices are based on formulas that include both costs of production and historical market prices. Provinces can choose to join the program for all or some of the commodities. Tripartite programs have been established for red meat, sugar, and apples.

Special Canadian Grains Program

The Special Canadian Grains Program (SCGP) was first announced in December 1986 to provide deficiency payments to growers of wheat, barley, oats, rye, mixed grains, corn, soybeans, rapeseed, flaxseed, and sunflowers. A similar program was announced in December 1987 for the 1987/88 crop year. This kind of deficiency payment program is unprecedented in Canadian agricultural history. Payments made for the 1986/87 crop year were based on seeded area and regional yields. Assistance rates to each commodity were proportional to the price decline attributed to the impact of the U.S.-EC subsidy war.

Two-Price Wheat Program

This program, in effect in various forms since 1967, is designed to insulate domestic wheat prices from the volatility of the international market. Wheat sold for domestic human use is subject to a floor and ceiling price. Until 1978, the Federal Government paid farmers the difference between the domestic price and the higher export price. In April 1986, the domestic price was increased to the upper range of Can$7.00 per bushel (Can$257 per metric ton). The range was increased to Can$6.00-$11.00 per bushel in August 1986, although the actual selling price was not changed.

Corn Competitive Policy

The CWB was required to sell wheat, barley, and oats to the domestic feed market at a regulated price based on the import price of imported U.S. corn at Montreal during 1976-85. This policy sometimes caused the corn competitive price to be significantly above or below the export price for these grains, depending on local and U.S. supply conditions. Sales at the corn competitive price could result in a tax on or subsidy to feed grain producers with the opposite condition prevailing for feed grain consumers. A Federal payment of Can$8.0 million was made to the CWB in 1982/83 to further compensate producers because of this policy. The policy was discontinued during the 1984/85 crop year.

Supply Management Programs

The Canadian dairy sector is regulated by a supply management program. Fluid milk pricing and marketing are under provincial control. Provincial marketing boards price fluid milk based on calculated costs of production. Output is limited by producer quotas. Little milk crosses provincial boundaries and milk can only be imported under license. The Canadian Dairy Commission (CDC) regulates manufacturing milk at the Federal level. Manufacturing milk policy is based on a target price, which is set by the CDC and achieved through a deficiency payment and government purchases of butter and skim milk powder

(SMP) at support prices. The domestic price is maintained by production quotas and quantitative restrictions on imports of manufactured dairy products. Excess supplies of SMP and evaporated whole milk are exported at prices below support levels. Export subsidies are financed through producer levies.

Production controls are also an integral feature of Canadian supply-management programs for chickens, turkeys, and eggs. Production is regulated by quotas, and producers are assured an adequate return over costs through regulated prices. Imports are strictly controlled by quotas and licensing restrictions and are based on the previous year's production.

Other Programs

The Canadian Government operates various programs that provide general benefits to all of agriculture. These programs fund research, inspections, regional development and infrastructure, marketing, and promotions. Other Government programs provide benefits by reducing risk and input costs.

There is a joint Federal-provincial crop insurance program whereby, in most provinces, the Federal Government pays 50 percent of the premium costs and the provincial governments pay the administrative costs. Two other programs, Prairie Grain Advance Payments Act and the Advance Payments for Crops Program, provide cash advances to producers of storable crops in the form of interest-free loans. The feed freight assistance program subsidizes transportation costs of feed grains to feed-deficit areas. The feed freight adjustment fund provides grants for enhancing local feed grain production. Other programs provide drought assistance to livestock farmers, fuel tax rebates to offset Federal sales and excise taxes, and credit assistance to producers. A large Federal payment was made in 1981/82 to compensate wheat, barley, and oats producers for Canada's compliance with the U.S. grain embargo on the Soviet Union.

The provincial governments in Canada play a significant role in farm programs. Provincial governments have implemented a wide variety of support payments and commodity stabilization programs for producers in their provinces. Some of these programs were designed to augment ASA benefits. Provincial programs have been pervasive in the red meat sector, although the new red meat program is intended to replace them. Other programs provide subsidies or rebates on farm taxes, interest payments, fertilizer, lime, and feed. Expenditures by Saskatchewan and Alberta, the largest agricultural producers, have risen to the highest levels the past several years to offset the financial effects of low prices, but Quebec and Ontario have traditionally had the largest agricultural budgets.

Implications of Agricultural Programs

Subsidized rail freight rates on grains and oilseeds for export have been the most significant policy measure affecting production patterns in western Canada. Lower transport costs allow farmers to receive higher farmgate prices (15). Production of grains and oilseeds for export has been encouraged at the expense of domestic feed use and processing, which has hurt western Canada's livestock and crushing industries. On the other hand, the low transportation rates during the seventies contributed to a deterioration in the grain transportation network, and actually worked to reduce exports. Recent increases in rates are designed to improve the rail network and remove some of the distortions caused by the previous low rates.

During the early eighties, the two-price system worked to transfer small gains to consumers because domestic prices were lower than export prices. However, with the recent changes and falling export prices, consumers are now transferring income to producers because domestic prices are much higher than export prices.

The supply-managed commodities--dairy, poultry, and eggs--are insulated from world competition through high support prices and restrictive border measures. The Canadian system of production quotas has led to substantial value accruing to quota holders. Quota costs have become capitalized in the value of land, raising entry costs for new farmers (30). Although one objective of the dairy and poultry programs has been to maintain the family farm, the supply-management programs have not prevented the consolidation of farms into larger and larger units.

The Canadian dairy program has been able to prevent large surpluses of dairy products from accumulating, albeit at a large cost to consumers and taxpayers (9, 31). In addition, exporting surplus products at prices below domestic prices has contributed to instability in world dairy trade. The poultry and egg programs also have been costly to consumers and taxpayers. Paradoxically, poultry imports have increased in the eighties because the regulatory bodies have not been able to balance the growing demand with domestic production.

Canada's stabilization programs are generally considered to have had little impact on resource allocation. Payments under these programs have usually been small, with large payments occurring sporadically. Payments under the WGSP, however, have been growing in this period of low prices, thus keeping some farmers financially viable who otherwise would have been forced out of farming. Provincial programs have contributed to increased output of some commodities, such as pork.

MEASURES OF GOVERNMENT INTERVENTION IN CANADIAN AGRICULTURE

Government intervention in agriculture has received increased public attention in both domestic and international forums. Budget outlays by Canada for farm programs are often cited as an indicator of the level and extent of government support. These outlays represent direct transfers from the taxpayers to the agricultural sector. Increasing farm program budgets in many countries, including Canada, are one indicator of the growth of government intervention.

Budget outlays alone are less than satisfactory measures of the total support provided by government policy. Some policy instruments (such as tariffs, import quotas, and variable levies) permit Canadian producers to receive prices higher than prevailing world market prices. Canadian consumers bear the cost of these policies because they must pay more than world market prices. Yet, this tax on consumers (along with the support received by producers) does not appear in the budget. Budget outlays also do not reveal support to producers from other types of government intervention, such as concessional credit offered at below-market rates of interest.

The level of government intervention resulting from Canadian agricultural policies that affect agricultural producers and consumers is examined using measures known as the producer subsidy equivalent (PSE) and the consumer subsidy equivalent (CSE). Policies that result in budget outlays (such as stabilization payments and input subsidies) and policies that do not (such as

tariffs and import quotas) are included in the PSE and CSE measures. (See Appendix 1 for more details on the PSE and CSE method.)

Information on government support to or taxes on Canadian producers is reported three ways: 1) as the value of total policy transfers to producers, 2) as policy transfers per ton produced, and 3) as a ratio between the total value of policy transfers to producers and total producer agricultural value (cash receipts plus net direct payments). The information on government support or taxation of Canadian consumers is expressed similarly. PSE's and CSE's can be positive or negative. Given the numerous programs affecting Canadian agriculture and the attendant conceptual and data problems associated with measuring each program, the PSE's and CSE's presented here may differ from other estimates.

Commodity and Policy Coverage

PSE's are calculated for 13 commodities--9 crop and 4 livestock categories--for the period 1980/81-85/86. Preliminary estimates of PSE's were made for 1986/87. The covered crops accounted for 75 percent of total cash receipts and the livestock categories accounted for 93 percent of cash receipts during the 7-year period. The 13 commodities represented 85 percent of total cash receipts (table 3). The most significant crops omitted were fruits, vegetables, tobacco, and floriculture and nursery products.

CSE's were calculated for 11 commodities, including 3 additional categories under dairy. Some crops--oats, rye, rapeseed, and flaxseed--were excluded because they are minor consumption items and reliable wholesale prices are not available. The CSE's would be negligible for those commodities.

This study focuses on support provided by four broad policy categories at the Federal level, plus provincial programs that are not differentiated by policy type:

- o Income/price support--programs providing direct payments to support either prices or income, and implied support through tariffs and quotas.

Table 3--PSE commodities: Share of cash receipts for Canada

Year	Crops		Livestock		All commodities	
	Cash receipts	Share of total	Cash receipts	Share of total	Cash receipts	Share of total
	Mil.Can$	Pct.	Mil. Can$	Pct.	Mil. Can$	Pct.
1981	5.5	77.8	7.7	93.0	15.4	85.7
1982	6.9	76.5	8.2	92.4	17.8	84.8
1983	6.4	76.5	9.1	96.3	17.7	87.6
1984	7.1	79.0	8.6	95.4	18.0	87.2
1985	6.9	75.4	9.3	95.5	18.9	85.7
1986	5.8	73.3	9.0	92.6	17.6	84.1
1987	5.2	68.8	9.4	88.4	18.1	80.7
Average	6.3	75.3	8.8	93.4	17.6	85.1

Sources: (22, app. table 1).

- o Input subsidies--programs affecting variable costs of production such as fuel subsidies.

- o Marketing/promotion subsidies--programs affecting marketing costs such as rail rate subsidies.

- o Long-term/structural programs--programs affecting long-term agricultural production, such as research or rural development.

- o Provincial programs--various programs that include all of the above, but are administered at the provincial rather than the Federal level.

The PSE and CSE measures incorporate most of the major Federal and provincial government policies that directly affect Canada's agricultural production, consumption, and trade. The estimates exclude several important programs that affect the agricultural sector, mainly because there is not an appropriate method to measure the benefits or costs to producers. Canadian policies or programs not included are (table 4):

- o The impact of the Meat Import Act in 1985.

- o Voluntary export restraint agreements and phytosanitary regulations.

- o Lending activities of the Farm Credit Corporation.

- o Food aid and current export credit programs.

- o General economic and tax policies that affect agriculture.

Table 4--Policies excluded from PSE and CSE calculations for Canada

Policy instrument	Reason for exclusion
Meat Import Act for beef	Only in effect during 1985. Insufficient data or method to determine impacts.
Health and sanitary regulations for livestock	Insufficient data and method to determine impact on price or imports.
Farm Credit Corporation	Insufficient data to determine impact on production.
Food aid and export credits	Insufficient method to determine impact on production or exports.
General economic and tax policy	Insufficient data and method to determine impact on production.
Countervailing duties	Insufficient data and method to determine impact on production.

- The impact of recent countervailing duties on EC beef, EC pork, and U.S. corn imports.

The PSE's do not account for possible losses in income because of policies that control supplies, such as dairy and poultry production quotas. They also do not include the effects of government policies on intermediate product prices. For example, the PSE's for livestock do not include the effect (a tax) of the subsidized rail rates that raise feed prices.

Calculations of PSE's and CSE's

Various data series used in the analysis are presented for different time periods--fiscal, crop, and calendar years. The budget data are on a Canadian fiscal year basis--April 1-March 31 (table 5). 2/ The cash receipt data for all commodities are on a calendar year basis, as are production, consumption, and price data for livestock. The crop and dairy data are reported on an August-July year. Crop year data for August 1980-July 1981 are matched with budget data for the fiscal year beginning April 1980. Government payments made by Canada during April 1980-March 1981 were allocated to crops produced and marketed between August 1980-July 1981. Livestock data for calendar year 1980 are matched with budget data for the fiscal year beginning April 1980. CSE's that use calendar year consumption data and do not include estimates based on budget data--beef, pork, poultry, and sugar--are presented on a calendar year basis, while the others are presented on a crop year basis.

Table 6 summarizes how Canadian programs are incorporated into the PSE's and CSE's. For many components of the PSE's and CSE's, total budget expenditures are allocated by crop based on each crop's share of cash receipts. For some items (such as inspections), government expenditures could be allocated separately for crops and livestock, but for other items (such as fuel subsidies), the budget expenditures had to be allocated among all commodities.

Different weighting factors are used to allocate government expenditures to the appropriate commodities. If a budget item is allocated among all PSE commodities, weighting factor (WF) 1 is used. For example, WF1 for wheat is the percentage of total cash receipts accounted for by wheat (app. table 1). WF2 is used if the budget item is allocated only among crops, and WF3 is used if the allocation is only among livestock. WF4 is used for budget items (such as the WGSP and the transportation subsidies) that are allocated only among western grains and oilseeds.

Income/Price Support

- ASA--Payments under this act are entered in the PSE estimates for the appropriate commodity under both direct payments and policy transfers. Over the period, payments were made for Winter wheat, corn, soybeans, cattle, hogs, and sugar beets. Dairy payments, although made under the ASA, are different from other commodities and are explained under the dairy section.

- WGSP--Payments under this program appear two places in the PSE calculations. For the appropriate commodities, net payments to farmers

2/ The budget data in table 5 contain only those items that are included in the PSE and CSE calculations, and the totals are, therefore, smaller than the data presented in figure 1.

(payouts from the fund minus producer contributions) are included under direct payments as part of producer value (table 7). The same figure also appears as an entry under policy transfers. Net payments are weighted by the six crops' share of cash receipts (WF4 from app. table 1). Mustardseed is not included.

The PSE estimates do not take into account the fund deficits. It is not clear how the program will deal with the current deficit. It may eventually be amortized through larger producer contributions or written off by the Canadian Government.

- Crop insurance--Net farmer receipts are used in both the direct payments category and under policy transfers (table 8). This value is weighted by WF2. The crop insurance program is intended to be self-financing, so deficits in any one year are not included.

Table 5--Federal and provincial budget expenditures on agriculture, Canada 1/

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
	Million Canadian dollars					
Income/price support--						
ASA payments 2/	335.7	439.0	301.1	430.9	423.0	331.8
WGSP 3/	96.5	112.8	111.0	130.6	106.2	89.7
Crop insurance 3/	100.1	115.9	142.2	134.0	188.5	198.2
CWB pool deficits	0	0	0	8.1	0	201.3
Export credits	16.6	21.8	11.1	6.5	4.6	1.2
Input subsidies--						
Corn competitive	0	0	8.0	0	0	0
Fuel subsidy	31.2	27.2	27.3	28.5	44.4	102.0
Other assistance--						
Crops	9.7	100.7	24.7	29.3	40.5	121.6
Livestock	54.1	2.2	0.0	0.0	27.0	61.7
Feed freight asst.	18.0	17.5	15.5	16.8	18.7	15.2
Feed freight adj. fund	10.3	9.2	2.5	0	0	0
Marketing subsidies--						
Transportation	323.5	347.3	604.1	837.6	938.9	696.8
Inspection						
Crops	42.8	41.4	61.5	67.0	70.0	68.4
Livestock	126.5	129.4	179.8	189.1	205.0	240.2
Marketing/promotion	4.0	11.2	12.7	14.2	24.9	14.7
Long-term, structural--						
Research and advisory	125.0	161.6	227.2	259.6	268.8	267.8
Development, structure	116.6	114.0	111.2	117.0	166.8	87.0
Provincial programs	263.7	430.1	443.9	391.9	495.5	612.8
Total	1,674.4	2,081.3	2,283.8	2,661.1	3,022.8	3,110.4

1/ April-March fiscal year.
2/ All commodities, including dairy.
3/ Federal contribution only.
Sources: (7, 11, 13, 19, 20, 22, 28, 32).

Table 6--Policies included in PSE and CSE calculations, Canada

Policy instrument	Commodities covered	Policy explanation	Estimation procedure and sources
Research, advisory	All PSE's	Federal Government expenditures.	Budget data allocated by share of cash receipts (20, 21, 29).
Inspection services	All PSE's, except sugar	Federal Government expenditures.	Budget data allocated by share of cash receipts (20, 21, 29).
Development structure	All PSE's	Federal Government expenditures.	Budget data allocated by share of cash receipts (20, 21, 28).
Provincial programs	All PSE's	Provincial payments on various programs--lime and fertilizer subsidies, interest rebates.	Budget data allocated by share of cash receipts (7, 22).
Marketing/ promotion	All PSE's, except sugar and dairy	Federal Government expenditures on marketing and trade promotion.	Budget data allocated by share of cash receipts (32).
Fuel subsidy	All crop PSE's	Federal rebates on fuel taxes.	Budget data allocated by share of cash receipts (20, 21, 28).
Export credits	Wheat PSE, CSE	Federal payments to banks for loans made in early seventies to subsidize wheat sales to Brazil and Algeria.	Budget data allocated to wheat (20, 21, 28).
ASA payments	Corn PSE Pork PSE Soybeans PSE Wheat PSE Sugar PSE	Price support program that provides deficitency payments when market prices fall below support levels.	Budget data (7).
WGSP	Oats PSE Wheat PSE Barley PSE Rapeseed PSE Flaxseed PSE Rye PSE	Joint Federal and producer program to support income when net cash-flow falls below a 5-year average.	Budget data allocated based on cash receipts (11).

Continued --

Table 6--Policies included in PSE and CSE calculations, Canada--Continued

Policy instrument	Commodities covered	Policy explanation	Estimation procedure and sources
Corn competitive price policy	Wheat PSE, CSE Barley PSE, CSE Oats PSE	CWB required to sell feed grains at regulated price based on U.S. corn price at Montreal.	Estimate based on difference between corn competitive price and adjusted export unit value (13, 17).
CWB pool deficits	Wheat PSE Barley PSE Oats PSE	Federal payments to the CWB when pools are in deficit.	Federal payment entered for appropriate commodity (13).
Two-price wheat	Wheat PSE, CSE	Fixed domestic price that may be above or below world price	Difference between domestic prices and export price multiplied by wheat used for food (13, 23).
Import licenses	Barley PSE Oats PSE	Imports only allowed under license.	Difference between domestic price and U.S. price multiplied by production (10, 29).
Transportation subsidies	Wheat PSE Barley PSE Oats PSE Rye PSE Rapeseed PSE Flaxseed PSE	Federal expenditures to the railroads to offset low freight rates, for branch line rehabilitation.	Budget data allocated based on cash receipts (19, 20, 28).
Feed freight adjustment	Corn PSE	Federal grants to enhance local grain production.	Budget data allocated to corn (19, 20, 28).
Feed freight assistance	Beef PSE Pork PSE Poultry PSE Dairy PSE	Federal payments that subsidize movement of feed grains to feed-deficit areas.	Budget data allocated based on cash receipts (19, 20, 28).
Crop insurance	All crop PSE's	Federal and provincial governments subsidize insurance premiums and administrative costs.	Government contributions based on share of cash receipts (7).
Other assistance	All PSE's, except poultry	Miscellaneous Federal expenditures (such as drought relief and interest rebates).	Budget data allocated by share of cash receipts (19, 20, 28).

Continued --

Table 6--Policies included in PSE and CSE calculations, Canada--Continued

Policy instrument	Commodities covered	Policy explanation	Estimation procedure and sources
Tariff	Beef PSE, CSE Pork PSE, CSE Sugar PSE, CSE Corn PSE, CSE	Federal tariff on imports.	Tariff rate multiplied by production for PSE or consumption for CSE (8).
Quota/price support	Poultry PSE, CSE	Production and imports regulated by quotas; producer prices fixed by formula that includes all costs of production.	Difference between U.S. and Canadian prices, multiplied by production (2).
CDC promotion, administration	Dairy PSE	Advertising, promotion, and administrative expenditures	Budget data (12).
Producer levies	Dairy PSE	Producer payments for disposal of surplus dairy products.	Budget data (12).
Direct payments	Dairy PSE	Federal payments to producers.	Budget data (12).
Quota/price support for butter and skim milk powder	Dairy PSE, CSE Cheese CSE Fluid milk CSE Butter/SMP CSE	Producer prices supported at levels above world prices.	Difference between New Zealand prices for butter, SMP multiplied by milk production (5, 12).
Fluid milk premium	Dairy PSE Fluid milk CSE	Premium for fluid over manufacturing milk.	Difference between manufacturing and fluid price times fluid production (5, 26).

Table 7--Western Grain Stabilization Program, Canada

Marketing year	Producer levies	Government		Net receipts
		Contributions	Payments	
		Million Canadian dollars		
1980/81	48.3	96.6	0	-48.3
1981/82	56.4	112.8	0	-56.4
1982/83	55.5	111.0	0	-55.5
1983/84	65.3	130.6	223.0	157.7
1984/85	45.5	106.2	522.0	476.5
1985/86	29.9	89.7	859.0	829.1

Source: (11).

Table 8--Crop insurance statistics, Canada

Marketing year	Contributions			Receipts	
	Farmer	Provincial	Federal	Farmers	Net
			Million Canadian dollars		
1980/81	98.3	21.5	100.1	262.2	163.9
1981/82	123.1	22.0	115.9	170.9	47.8
1982/83	132.1	40.4	142.2	260.8	128.7
1983/84	146.8	31.4	134.0	289.3	142.5
1984/85	165.4	39.1	188.5	546.5	381.1
1985/86	201.5	44.0	198.2	743.5	542.0

Source (7).

- o CWB pool deficits--Pool deficits over the years have been infrequent, but deficits occurred in 1982/83 for barley and in 1985/86 for wheat, barley, and oats. The deficit for each commodity is entered into the appropriate PSE.

- o Export credits--Federal payments to commercial banks to payoff subsidies for wheat sales made in the early seventies are allocated entirely to the wheat PSE. A program to finance the construction of grain elevators in Brazil is also included; these expenditures are allocated to wheat.

- o Two-price wheat--The domestic mill price is compared with an average annual export quotation. The difference is applied to the quantity of wheat used for domestic food to estimate the subsidy or tax on producers (table 9). The same value is entered with the opposite sign in the CSE for wheat.

- o Import licenses--By restricting imports of barley and oats, the licenses keep domestic prices higher than they would otherwise be. The effect of

the licenses is measured by comparing a domestic Canadian price with a comparable U.S. price. The price difference is multiplied by production (table 10). If the Canadian price exceeds the U.S. price, the license is assumed to have had no affect. Even though wheat imports are subject to licensing requirements, the calculation for the two-price wheat policy is assumed to capture the effect of the license.

Table 9--Transfers under two-price wheat policy, Canada

Marketing year	Domestic mill price	Export price 1/	Price difference	Food use	Value of transfer 2/
	Canadian dollars per metric ton			1,000 mt	Mil. Can$
1980/81	240	247	-7	1,860	-13.0
1981/82	217	214	3	1,987	6.0
1982/83	204	205	-1	1,999	-1.0
1983/84	213	215	-2	2,015	-3.2
1984/85	224	235	-11	1,976	-21.4
1985/86	240	249	-9	2,133	-19.2
1986/87	257	181	76	2,000	152.0

1/ Canadian Wheat Board selling quotations, St. Lawrence, No. 1 Canadian Western Red Spring, 13.5%.

2/ A negative value means a tax on producers and a subsidy to consumers.

Sources: (13, 23).

Table 10--Producer support due to import licenses for barley and oats, Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Barley:							
U.S. price (Can$/mt) 1/	141.93	123.67	99.59	143.72	128.67	97.26	72.35
Canadian price (Can$/mt) 2/	145.85	123.91	100.13	130.12	133.16	103.10	81.14
Price difference (Can$/mt)	3.92	.24	.54	-13.60	4.49	5.84	8.79
Production (1,000 mt)	11.4	13.7	14.0	10.2	10.3	12.4	14.6
Value of support (Mil. Can$) 3/	44.7	3.3	7.6	0	46.3	72.4	128.3
Oats:							
U.S. price (Can$/mt) 4/	137.96	149.31	114.83	127.97	133.41	110.39	103.90
Canadian price (Can$/mt) 2/	144.51	121.39	94.83	127.73	123.87	91.81	76.82
Price difference (Can$/mt)	6.55	-27.92	-20.00	-.24	-9.54	-8.58	-27.08
Production (1,000 mt)	2.9	3.2	3.6	2.8	2.7	3.0	3.3
Value of support (Mil. Can$) 3/	19.0	0	0	0	0	0	0

1/ Minneapolis feed price, reported at Duluth after March 1987.

2/ Winnipeg cash price.

3/ The price difference multiplied by production. If the Canadian price is above the U.S. price, the value of support is set at zero.

4/ Price received by farmers.

Sources: (10, 29).

- o Quota/price support (poultry)--It is assumed that Canadian prices would more closely parallel U.S. prices in the absence of the supply management system given that the PSE for U.S. poultry is low (31). For broilers and turkeys, the difference between Canadian producer prices and U.S. prices, adjusted for distribution costs, is multiplied by Canadian production and used as the value accruing to producers from this program (table 11). The same value is entered in the CSE as a tax on consumers.

- o Corn competitive policy--The level of subsidy or tax is estimated by comparing the corn competitive price with an estimated export price (the export unit value adjusted for quality differences) (table 12). This value is entered as either a subsidy or tax for wheat, barley, and oats PSE's.

Table 11--U.S.-Canadian poultry: Prices and value of quota/price support

Calendar year	Broiler price		Turkey price		Canadian production		Quota/price support		
	United States	Canada	United States	Canada	Broilers	Turkeys	Broilers	Turkeys	Total
	Can$/kg				1,000 mt		Mil. Can$		
1980	1.05	1.25	1.38	1.57	390.2	100.5	77.3	19.1	96.4
1981	1.08	1.46	1.37	1.81	398.8	95.4	151.9	42.0	193.9
1982	1.07	1.43	1.37	1.79	397.4	97.5	143.1	41.0	184.0
1983	1.16	1.43	1.33	1.73	395.2	96.8	106.7	38.7	145.4
1984	1.39	1.57	1.78	1.87	427.4	97.7	79.1	9.1	88.2
1985	1.33	1.44	1.91	1.79	472.1	102.4	50.0	-11.5	38.6
1986	1.56	1.45	1.82	1.77	487.7	104.9	-51.7	-5.0	-56.7

Sources: (2, 25, 29, app. tables 18 and 19).

Table 12--Transfers under corn competitive price policy, Canada

Year	CWB domestic sales			Price difference			Policy transfers		
	Wheat	Oats	Barley	Wheat 1/	Oats 2/	Barley	Wheat	Oats	Barley
	1,000 mt			Can$/mt			Mil. Can$		
1980/81	354.7	10.4	31.7	-10	7	-11	-3.5	0.1	-0.3
1981/82	363.3	111.3	226.4	-39	-28	-44	-14.2	-3.1	-10.0
1982/83	225.4	97.7	98.1	-38	-20	-33	-8.6	-2.0	-3.2
1983/84	31.0	.7	0.4	4	25	3	1	0	0
1984/85	23.8	5.3	72.6	-35	-16	-25	-0.8	-0.1	-1.8

1/ The export unit value for all wheat adjusted by the difference between the final payment for No. 1 Canadian Western Red Spring and Canada feed.

2/ The export unit value for all oats adjusted by the difference between the final payment for No. 1 feed and Designated No. 1 feed.

Sources: (3, 13, 17).

Table 13--Selected Canadian tariff rates

Commodity	1980	1981	1982	1983	1984	1985	1986	1987
	Canadian dollars per metric ton							
Corn	2.99	2.87	2.72	2.56	2.40	2.28	2.13	1.97
Sugar								
Refined	30.86	NC	NC	NC	NC	NC	NC	NC
Unrefined	22.04	NC	NC	NC	NC	NC	NC	NC
Beef 1/	55.10	44.08	NC	NC	NC	NC	NC	0
Pork 2/	22.11	NC	NC	NC	NC	NC	NC	NC

NC = no change.
1/ Fresh, chilled, and frozen.
2/ Most favored nation (MFW) rate for bacon, ham, shoulders, and other pork (prepared, preserved other than canned).
Source: (8).

- o Tariffs--Average tariff rates for corn, sugar, beef, and pork PSE's, are multiplied by the quantity of production and entered as producer subsidies (table 13). For the CSE's for the same commodities, tariff rates are multiplied by consumption and entered as a consumer tax. The tariff on unrefined sugar is used for the PSE, and the tariff on refined sugar is used for the CSE.

Input Subsidies

- o Fuel subsidy--Federal budget data are weighted by WF1 and entered for all commodities.

- o Other assistance--This category includes a miscellaneous set of Federal expenditures. Different programs are identified for crops and livestock. Some of the programs include interest rebates, interest-free loans, drought assistance for livestock producers, embargo assistance in 1980/81, and planting assistance for sugar beet growers. Total budget expenditures are weighted by either WF2 (crops) or WF3 (livestock).

- o Feed freight assistance--This program subsidizes transportation costs on feed grains and is entered as an input subsidy for livestock categories. Total expenditures are weighted by WF3.

- o Feed freight adjustment fund--These expenditures are grants for enhancing local feed grain production and are allocated entirely to corn.

Marketing Subsidies

- o Transportation--These expenditures are allocated to western grains and oilseeds--wheat, barley, oats, rye, rapeseed, and flaxseed--using WF4. Items included as transportation subsidies are listed below:

  --Payments to the CWB for lease or purchase of hopper cars.
  --Branchline subsidies.

--Payments to the railroads under the WGTA.
--Payments to the railroads for rehabilitation of rail lines.
--Payments to the railroads for 1982/83 revenue losses.

- Inspection services--Among Federal expenditures on inspection services, different budget items are identified for crops and livestock and allocated by WF2 or WF3.

- Marketing/promotion--Federal expenditures on marketing and trade promotion programs include the Program for Export Market Development, contributions to Canadian International Grains Institute, contributions to the Canola Council, Agriculture Canada's Export Expansion Program, Department of Regional Economic Expansion's operating expenses for market development and promotion activities, and External Affairs estimated operating expenses for the agricultural portion of the Trade Development Program (32). These expenditures are allocated among all commodities by WF1.

Long-Term, Structural

- Research and advisory--Federal Government expenditures on research and advisory services are allocated among all commodities by WF1.

- Development, structure--Federal expenditures on infrastructure and regional agricultural development are allocated among all commodities by WF1.

Provincial programs--This category includes net direct provincial payments, provincial contributions to the crop insurance program, and rebates on interest rates, fertilizer, lime, feed, pesticides, and taxes (22). Total expenditures are weighted by WF1.

Dairy program--Several items unique to the dairy program are described as follows:

- Direct payments--Direct Federal payments to producers of industrial milk and cream are entered under price/income support. These payments also include expenditures for storage, freight, handling, commissions, and interest on loans from the Canadian Government. Payments, made under the auspices of the ASA, have been Can$6.03 per hectoliter of milk (Can$2.66/cwt) since 1975.

- Quota/price support for butter and SMP--The value for butter is calculated as the difference between a New Zealand f.o.b. export price, adjusted upward for transport costs, and the Canadian support price, multiplied by the quantity of milk used for butter (table 14). The same procedure is done for SMP. This value is entered into the PSE. The total value is then entered into the CSE's based on the quantity of milk used for the different products (table 15).

- Fluid milk premium--The PSE calculation assumes fluid milk premiums are not justified based on health or quality considerations. The difference between an average national fluid milk price and the manufacturing milk price is multiplied by the quantity of milk sold as fluid (table 16). This value is also entered into the CSE as a tax on consumers.

Table 14—Quota/price support for butter and skim milk powder, Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Milk production (mmt)	7.5	7.7	7.7	7.6	7.6	7.5	7.6
Milk equivalent:1/							
Butter (1,000 mt)	330.0	339.0	339.0	334.0	334.0	330.0	334.0
SMP (1,000 mt)	629.0	645.0	645.0	637.0	637.0	629.0	637.0
New Zealand price:2/							
Butter (Can$/mt)	2,383.0	2,861.0	2,838.0	2,545.0	2,212.0	1,653.0	1,627.0
SMP (Can$/mt)	1,269.0	1,480.0	1,425.0	1,282.0	1,229.0	1,281.0	1,318.0
Canadian price:3/							
Butter (Can$/mt)	3,640.0	4,080.0	4,380.0	4,620.0	4,780.0	4,930.0	5,040.0
SMP (Can$/mt)	2,200.0	2,440.0	2,520.0	2,750.0	2,850.0	2,920.0	2,980.0
Price difference:							
Butter (Can$/mt)	1,257.0	1,219.0	1,542.0	2,075.0	2,568.0	3,277.0	3,413.0
SMP (Can$/mt)	931.0	960.0	1,095.0	1,468.0	1,621.0	1,639.0	1,662.0
Value of support:4/							
Butter (Mil. Can$)	415.0	413.1	522.5	693.7	858.6	1,081.3	1,141.3
SMP (Mil. Can$)	585.3	619.6	706.7	935.2	1,032.6	1,030.4	1,058.7

1/ 100 kilograms of whole milk is assumed to contain 3.6 percent butterfat, and yields 4.4 kilograms of butter, containing 82 percent butterfat, plus 8.4 kilograms of skim milk powder.

2/ New Zealand f.o.b. price adjusted upward for transport costs.

3/ Canadian support prices.

4/ Calculated as the price difference times production in milk equivalent.

Sources: (5, 26)

Table 15—Cost to consumers of cheese, fluid milk, and butter/SMP for quota/price support, Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
			Million Canadian dollars				
Milk equivalent:1/							
Cheese (mmt)	1.7	1.7	1.7	1.8	2.0	2.1	2.3
Fluid milk (mmt)	2.7	2.7	2.7	2.7	2.7	2.6	2.6
Butter/SMP (mmt)	3.0	3.0	3.2	3.0	3.0	2.9	2.7
Share of milk:2/							
Cheese (pct.)	22.7	21.7	22.1	23.7	25.7	28.9	29.4
Fluid milk (pct.)	36.0	35.1	35.1	35.5	35.5	35.6	36.8
Butter/SMP (pct.)	40.4	39.3	40.4	40.2	39.8	39.9	36.5
Total milk subsidy:3/	1,000.3	1,032.7	1,229.0	1,628.6	1,891.0	2,111.7	2,200.0
Cost to consumers:4/							
Cheese	227.1	224.4	271.8	386.1	485.3	610.1	647.8
Fluid milk	360.0	362.4	431.4	578.2	671.3	751.8	809.6
Butter/SMP	403.6	405.9	496.5	654.6	753.0	842.8	802.4

1/ 100 kilograms of whole milk is assumed to contain 3.6 percent butterfat, and yields 4.4 kilograms of butter, containing 82 percent butterfat, plus 8.4 kilograms of skim milk powder.

2/ Share of milk production.

3/ From table 14.

4/ Calculated as the share of milk production multiplied by the total subsidy.

Sources: (5, 26)

Table 16--Fluid milk premium, Canada

Marketing year	Price			Milk sold as fluid	Value of premium
	Fluid	Manufacturing	Difference		
	---------- Can$/mt ----------			Mmt	Can$ mil.
1980/81	397.09	312.33	84.76	2.7	228.9
1981/82	433.31	343.10	90.21	2.7	243.6
1982/83	460.05	355.99	104.06	2.7	281.0
1983/84	480.03	378.98	101.05	2.7	272.8
1984/85	505.41	389.82	115.59	2.7	312.1
1985/86	523.04	400.42	122.62	2.8	343.3
1986/87	524.52	413.28	111.24	2.8	311.5

Sources: (5, 27).

- o CDC promotion and administration--Advertising, promotion, and administration expenditures are entered into the PSE.

- o Producer levies--Producers pay levies on each hectoliter of milk sold to finance the disposal of surplus products, as well as a levy on any milk production that is over the allowed quota. These levies are entered as a negative in the PSE.

Trends in PSE's and CSE's in the Eighties

Trends in the PSE's and CSE's for 1981-86 are presented below. Two comments pertain to the general method of allocating expenditures by each commodity's share of cash receipts. This method probably overstates the importance of provincial expenditures to crops and understates it to beef and pork, where provincial governments have been most active. This method also overstates the budgetary support to barley and understates the support to rapeseed, because barley is a low-valued crop whereas rapeseed is a high-valued crop. Even if budget data were allocated by the quantity produced, the PSE's for barley and rapeseed would only change by a few percentage points.

PSE's for Crops

PSE's for most commodities increased throughout the eighties. PSE's for grains and oilseeds grown primarily in western Canada--wheat, barley, oats, rye, rapeseed, and flaxseed--were moderate, ranging between 15-20 percent, except for oats (app. tables 2-7). But the rate of growth was high for these commodities (table 17). The upward trend in these PSE's is because of increasing outlays for transportation, the WGSP, and crop insurance; changes in government policy; low world prices; and bad weather.

Transportation subsidies, a major source of support to western grains and oilseeds, have increased since 1984 when changes in the rail freight structure were made. Producers are only paying about 20 percent of the cost of moving grains and oilseeds to export positions. Increasingly large payments have been made under the WGSP since 1984. Support has gone from negative to

Table 17--Canada: Average PSE's and CSE's and growth rates, marketing years 1981-86

Commodity	PSE Average	PSE Growth rate	CSE average	Commodity	PSE Average	PSE Growth rate	CSE Average
		Percent				Percent	
Crops:				Livestock:			
Wheat	20.3	23.2	1.8	Beef	9.3	4.7	-0.7
Barley	15.2	36.7	.2	Pork	11.5	1.3	-.3
Oats	5.1	34.8	--	Poultry	21.7	-7.5	-7.2
Rye	14.8	12.5	--	Dairy	66.8	5.3	-35.4
Rapeseed	21.9	20.2	--	Cheese	--	--	-24.7
Flaxseed	16.6	11.1	--	But./SMP	--	--	-53.6
Corn	7.7	7.1	-1.5	Fl. milk	--	--	-33.6
Soybeans	9.1	16.5	--				
Sugar	24.3	46.9	-3.3	Weighted average 1/	24.5	11.5	-10.1

-- = Not calculated. 1/ All commodities.

strongly positive. In addition, CWB pool deficits in 1985/86 resulted in income transfers to wheat, barley, and oats producers.

PSE's can be significantly affected by changes in production or price as distinct from policy changes. Low world prices and poor crops resulting from bad weather reduced producer value in the mideighties, so PSE's would have increased even if government support had not. Although the PSE's are higher for rapeseed than for flaxseed and higher for rye than for oats, these differences stem from the value and size of each crop rather than any marked difference in type of program or level of support.

Support for corn and soybeans, which are produced in eastern Canada and are not eligible for WGSP payments or transportation subsidies under the WGTA, has increased less rapidly (app. tables 8 and 9). PSE's for corn and soybeans are only about half the level of those for western grains and oilseeds. Support comes from tariffs (corn), ASA payments, and crop insurance.

The PSE for sugar beets has been the most erratic, going from only 11 percent in 1980/81 to over 100 percent in 1985/86 as world prices and Canadian production fell dramatically and government assistance increased (app. table 10). Producers received both ASA payments and a special grant in 1985/86.

PSE's for Livestock

Support for beef and pork remained low and stable during the period, with the PSE averaging about 10 percent (app. tables 11-14). The main sources of support were tariff protection and occasional stabilization payments. The PSE's would likely be higher if provincial data by commodity program were available.

The PSE's show a rising trend of support for poultry through 1982/83 because the supply-management system that was begun in 1979 introduced a distortion

between Canadian and U.S. prices (app. table 17). This price differential, entered under quota/price support, narrowed and even turned negative in 1985/86 because the Canadian dollar weakened against the U.S. dollar. Support under the supply-management system actually became a tax on producers in 1985/86. This situation illustrates how important exchange rates can be in influencing reference prices and, ultimately, measured levels of support.

The dairy PSE is the highest, on average, as Canadian producer prices have been supported at levels much higher than world prices (app. table 20). Even though the dairy PSE increased in the eighties, its rate of growth was much slower than that for grains and oilseeds. The main PSE component, quota/price support for butter and SMP, doubled over the period, as Canadian support prices rose and New Zealand prices fell. Direct subsidy payments were constant throughout the period, reflecting the policy choice to limit direct budget outlays while letting consumers pay for the increase through higher prices. The fluid milk premium also increased as provinces raised fluid milk prices faster than the Federal Government increased manufacturing prices.

On the other hand, producer levies increased in order to subsidize the export of surplus products, reflecting the divergence of Canadian and world prices. This gap is also reflected in increasing over-quota levies on Canadian producers to discourage over-quota production.

CSE's for Crops and Livestock

CSE's were measured for wheat, barley, corn, and sugar (app. tables 21-24). In all cases, they were low. On average, CSE's were positive for wheat and barley and negative for corn and sugar. Negative CSE's imply lower consumption. There are few specific programs that affect consumers of these commodities. The corn competitive policy and small tariffs were the main policies influencing CSE's during 1981-86.

The CSE's for beef and pork were negligible, reflecting a small tax on consumers from tariffs (app. tables 25-26). The CSE for poultry varied from a tax on consumers to a subsidy during 1980-86 (app. table 27). This result stems from the use of a U.S. reference price that is affected by changes in the exchange rate. The CSE likely understates the tax on consumers from the supply-management program because the depreciation of the Canadian dollar reduced the price differential.

The CSE's for dairy products were high and trended upward during 1981-87 (app. tables 29-33). The CSE's for the different products included the quota/price support for butter/SMP and the fluid milk premium. The support to producers under the PSE translates directly into taxes on consumers.

Preliminary Estimates for 1986/87

Preliminary PSE estimates for 1986/87 focused on the most important government programs in terms of policy transfers. Most of the programs are in the price/income support category. Budget items in 1986/87 were estimated in one of two ways: 1) based on an annual average growth rate for those items showing a clear trend in the eighties, such as provincial expenditures, or 2) based on a 3-year average for those items where budget outlays are more variable, such as crop insurance. Total Federal expenditures are then summed and allocated in the usual way. Provincial expenditures are allocated separately.

To estimate the value of the policy transfers for crops, five items were identified as major contributors to total policy transfers: the Special Canadian Grains Program (SCGP), payments under the WGSP, transportation subsidies, CWB pool deficits, and the two-price wheat policy. The estimates are sensitive to the assumptions regarding these policies, especially CWB pool deficits and future payments under the WGSP because of the fund deficit. PSE's for all crops, except sugar, are estimated to increase in 1986/87 (table 18).

Expenditures in 1986/87 under the SCGP equaled Can$923 million. These expenditures were allocated based on each crop's share of cash receipts for the eight crops. A preliminary payment of Can$705 million under the WGSP was made in April 1987, and an additional payment of Can$695 million was made in November. The total net payment, after estimating producer levies, was about Can$1.4 billion for 1986/87.

Transportation subsidies under the WGTA for 1986/87 are Can$701.3 million, compared with Can$619.3 million in 1984/85 and Can$496.4 million in 1985/86. Based on the ratio of WGTA expenditures to total railroad subsidies in 1984/85 and 1985/86, the other transportation subsidies are estimated at Can$377.7 million for a total budget outlay of about Can$1 billion.

Table 18—Crops: Estimated producer subsidy equivalent (PSE), Canada, 1986/87

Item	Wheat	Barley	Oats	Rye	Corn	Rapeseed	Flaxseed	Soybeans	Sugar	Total
					Million Canadian dollars					
Production (mmt)	31.4	14.6	3.3	0.6	5.9	3.8	1.0	1.0	0.9	62.6
Adj. producer price ($/mt)	117	65	58	63	87	199	171	227	22	—
Producer price ($/mt)	130	80	75	63	87	199	171	227	22	—
Direct deductions ($/mt)	13	15	17	0	0	0	0	0	0	—
Direct payments	1,467.3	399.9	25.4	21.7	92.5	369.9	75.2	58.4	12.2	—
Producer value	5,141.1	1,348.9	216.8	60.0	605.8	1,126.1	246.2	285.4	32.9	—
Policy transfers:										
SCGP	506.7	138.5	8.3	4.6	74.8	125.5	24.0	40.6	—	923.0
WGSP	850.5	229.5	13.5	13.5	—	216.0	40.5	—	—	1,363.5
Transportation subsidies	679.8	183.4	10.8	—	10.8	—	160.0	30.0	—	1,089.8
CWB pool deficits	0	110.5	0	—	—	—	—	—	—	370.0
Two-price wheat 1/	152.0	128.3	0	—	—	—	—	—	—	152.0
Other Federal expenditures	273.6	72.1	10.6	5.3	41.0	67.2	15.6	20.5	14.7	520.4
Provincial expenditures	112.8	28.2	7.1	3.5	14.1	28.2	7.1	7.1	.7	208.7
Total transfers	2,575.4	890.5	50.3	37.7	129.8	609.5	119.5	68.1	15.4	4,272.9
Unit transfers ($/mt)	82.02	60.99	15.24	61.98	22.01	160.40	119.48	68.15	16.26	68.31
PSE (pct.)	50.1	66.0	23.2	62.9	21.4	54.1	48.5	23.9	46.6	49.6

— = Not applicable.
1/ Import licenses for barley and oats.

Early in 1988, the CWB announced final payments for the 1986/87 crop year. The total deficit in the barley pools was Can$110.5 million, but contrary to many expectations neither the wheat nor oats pools recorded deficits, allowing a final payment for these crops.

Support under the two-price wheat policy increased sharply in 1986/87 as export prices fell and the domestic mill price remained fixed at Can$257 per ton. This also dramatically increased the CSE for wheat (app. table 22).

Support for sugar beets is estimated to drop significantly in 1986/87 and 1987/88 because of higher producer value and stable world prices. For 1986/87, Can$13.6 million in special payments--Can$11.8 million planting assistance to Manitoba and Alberta producers and Can$1.8 million as transition assistance to Quebec farmers--was included under other Federal expenditures.

Four major livestock items were identified for estimation under policy transfers (table 19). For beef, pork, and poultry, 1986/87 calculations for producer value and policy transfers under tariffs and price support are based on published 1986 calendar year data.

Table 19--Livestock: Estimated producer subsidy equivalent (PSE), Canada, 1986/87

Item	Beef	Pork	Poultry	Dairy	Total
			Million Canadian dollars		
Production (1,000 mt)	1.0	0.9	0.6	7.6	10.2
Adj. producer price ($/mt)	2,800	1,792	1,507	413	—
Producer price ($/mt)	2,800	1,792	1,507	478	—
Direct deductions ($/mt)	0	0	0	65	—
Fluid milk price ($/mt)	0	0	0	525	—
Direct payments	3.0	0	0	0	—
Value of live exports	134.1	72.1	—	—	—
Producer value	3,049.1	1,699.2	947.9	3,452.4	9,148.6
Policy transfers:					
Tripartite program	3.1	0	—	—	3.1
Tariff	45.9	10.0	—	—	55.9
Quota/price support	—	—	-56.7	2,200.0	2,143.3
Other dairy 1/	—	—	—	336.5	336.5
Other Federal exp.	144.4	119.8	56.7	161.4	482.3
Provincial expenditures	126.9	70.5	35.3	98.7	331.4
Total transfers	320.3	200.2	35.3	2,796.6	3,352.4
Unit transfers ($/mt)	307.97	220.54	56.11	367.63	93.50
PSE (pct.)	10.5	11.8	3.7	81.0	36.6

— = Not applicable.

1/ Includes direct payments, fluid milk premium, and other dairy expenditures, net of producer levies.

Estimated PSE's for livestock do not change much from earlier years. The PSE for poultry shows a significant decrease--the result of an appreciation in the Canadian dollar that reduced the gap between U.S. and Canadian prices. Support under the quota/price category actually became negative in 1986/87. A Can$3.1 million payment was made to cattle producers under the new tripartite stabilization program in August 1986.

Government Support in 1987/88

Government support to crop producers is likely to grow in 1987/88. A program similar to the Special Canadian Grains Program was announced for 1987/88, with total support set at Can$1.1 billion. Payments under the WGSP are likely to remain large in 1987/88, although they could fall slightly as low prices in earlier years bring down the 5-year average on which these payments are based. The Government is currently looking at ways to deal with the fund's deficit, which could affect the size or future contributions and payouts.

The wheat pools are not expected to be in deficit during 1987/88, based on wheat projections of slightly higher export prices and sharply lower initial prices, although much uncertainty surrounds any projected export price. The feed barley pool could likely run a deficit despite lower initial prices because of uncertainties surrounding Saudi Arabia's barley imports and U.S. barley exports under the Export Enhancement Program. Assuming no change in the two-price wheat policy, support could fall slightly in 1987/88 because higher export prices for high-quality wheat will reduce the price gap between domestic and export prices.

The new tripartite program established for sugar in 1987 is likely to have a large deficit for 1987/88 based on a support price set above import prices. The PSE will likely increase in 1987/88, but not as much as in 1985/86.

Sources of Producer Support

This section describes how Canadian producer support is distributed between consumers and taxpayers, as well as the distribution of support by program for the 1981-86 period. Taxpayers bore the full cost of supporting wheat producers. Consumers were subsidized slightly through the two-price wheat policy and the corn competitive policy (table 20). However, changes in the two-price wheat policy in 1986/87 meant that producers received a much larger share of their support from consumers, even though taxpayers still paid for most of the wheat support. The relative shares for barley and oats are similar to wheat, with taxpayers paying almost the full cost of producer support.

The relative importance of government programs also varies by commodity. Wheat support, as with other western grains and oilseeds, came mostly from marketing subsidies--that is, railroad subsidies (table 21). Despite growing transportation subsidies, support in 1986/87 and 1987/88 under the price/income category is projected to become most important. Increased payments under the WGSP and the SCGP have raised total support in this category to over 50 percent.

Support for corn, also representative of soybeans and sugar, came mostly from taxpayers, although consumers paid some of the cost through tariffs. Consumer costs were even smaller for beef and pork, with only a small tariff affecting consumer costs.

Table 20--Distribution of producer support, Canada, 1981-86

Commodity	Consumers	Taxpayers
	Percent	
Wheat	1/	100
Barley	1/	100
Oats	1/	100
Rye	0	100
Rapeseed	0	100
Flaxseed	0	100
Corn	26	74
Soybeans	0	100
Sugar	8	92
Beef	16	84
Pork	6	94
Poultry	69	31
Dairy	87	13

1/ Consumers were subsidized during this period; see CSE appendix tables.

Table 21--Producer support by program, Canada, 1981-86

Commodity	Price/ income	Input subsidies	Marketing subsidies	Long-term/ structural programs	Provincial programs
			Percent		
Wheat	27	5	50	8	10
Barley	36	5	43	7	9
Oats	30	5	47	8	10
Rye	23	4	53	9	11
Rapeseed	32	3	48	7	10
Flaxseed	31	6	41	10	13
Corn	33	12	21	15	19
Soybeans	39	10	8	19	24
Sugar	58	16	0	8	19
Beef	16	6	25	23	30
Pork	13	10	25	23	30
Poultry	70	1	10	8	11
Dairy	103	1	-9	2	3

Consumer costs are highest for poultry and dairy. The supply-management systems, which maintain producer prices above world market prices by restricting lower priced imports, cause consumers to pay higher prices. Most producer support is paid for by consumers rather than through the budget. Producer support for pork and beef is divided evenly among the five categories, while price/income support is most significant for dairy and poultry.

Other Estimates of Producer Support

Other studies have estimated the support to or taxes on producers and consumers using the PSE/CSE method. These studies focused on grains and oilseeds because of their importance to Canada's agricultural sector. The methods used in these studies are generally comparable with that used in this study, allowing one to examine changing support levels over a decade.

One study estimated PSE's and CSE's for wheat, dairy, and sugar for 1975-79 (16). The average PSE for dairy was highest of the three, and the average CSE was highly negative, consistent with later estimates from this study (table 22). Producer support for wheat and sugar was low. The study showed a moderate subsidy for wheat consumers, stemming from the two-price wheat policy that subsidized consumers during 1975-79, a situation that reversed in 1986/87.

Another study estimated PSE's for the major grains and oilseeds for 1971-81 (14). Average support during the period was generally low for all commodities, averaging less than 10 percent (table 23). Support for wheat was highest and also the most variable. The study also suggested that reducing support levels would raise world wheat prices.

Table 22--Canada: Producer and consumer subsidy equivalents, average 1975-79

Item	Wheat	Dairy	Sugar
		Percent	
Average PSE	12.9	61.0	6.3
Average CSE	22.3	-50.8	-9.0

Source: (16).

Table 23--Canada: Proportional grain subsidies

Item	Wheat	Barley	Oats	Rapeseed	Flaxseed
			Percent		
1977-81 average	11.8	11.7	4.0	6.9	6.0
1971-81 average	14.5	9.1	3.5	5.1	4.7

Source: (14).

The Organization for Economic Cooperation and Development (OECD) recently released estimates of PSE's and CSE's for 1979-81 (18). The OECD commodity coverage was more inclusive than other earlier studies, but results were consistent with other studies. Dairy support was the highest, and the CSE was negative (table 24). Support for other commodities was moderate at less than 20 percent.

A more recent study estimated producer support for Canada's major grains and oilseeds for 1976-86 (11). Estimates of producer support differ significantly from the current study. Comparing the 6-year averages from this study with the current study, proportional subsidies were much higher for barley and oats, but lower for wheat, corn, and rapeseed (table 25). The differences reflect two main factors: allocating program support based on producer marketings rather than cash receipts, excluding direct payments as part of producer value.

Impacts of Trade Liberalization on Canada

Measures of government support do not alone provide information about changes in either the domestic agricultural sector or world trade that would result from the removal of such support. Several studies have analyzed the effects of trade liberalization on Canada's agricultural sector. These studies have examined the effects of both unilateral and multilateral liberalization.

Table 24--Canada: PSE's and CSE's, average 1979-81

Commodity	PSE	CSE
	Percent	
Wheat	17.6	2.7
Coarse grains	13.3	-1.1
Sugar	12.5	-2.2
Beef and veal	13.1	-1.1
Pigmeat	14.5	0
Poultry meat	25.7	-6.9
Dairy (milk)	66.5	-25.5

Source: (18).

Table 25--Canada: Proportional producer subsidy

Item	Wheat	Barley	Oats	Corn	Rapeseed
			Percent		
1981-86 average	14.9	22.5	32.8	2.9	8.0
1976-86 average	14.5	20.7	30.0	2.5	7.1

Source: (11).

One study estimated the effect of a particular country's support policies on world markets by simulating the unilateral removal of support (21). Canada has little impact on world prices because its agricultural sector is small relative to world agriculture. The unilateral removal of all agricultural support would result in an increase in total welfare (economic efficiency), but a decrease in producer surplus.

The same study also estimated the impact of multilateral liberalization. Again, total welfare would increase and producer surplus in Canada would fall, although in both cases by less than resulted from unilateral liberalization. Producer surplus and net exports were estimated to decline for dairy, food grains, and wheat.

Lattimore also estimated the impact of unilateral liberalization (30). Net agricultural trade was estimated to fall by as much as half. The adjustment caused reductions in output and producer prices, but only a small increase in consumption. The significant reductions in exports and increases in imports would occur in industrial milk products, grains, oilseeds, and fruits and vegetables. Net poultry imports would decline. Except for wheat and dairy, Canada's trade effects would have little effect on world agricultural markets.

The OECD, using the PSE's and CSE's in table 22, analyzed the impact of reducing government support on world production and trade (18). Five alternative methods of reducing assistance were used. In most scenarios, Canadian production and net trade fell, but declines were less than 1 percent of the value of net exports. Net beef exports increased the most, and net dairy exports increased slightly. Wheat and coarse grain exports fell slightly. Canada's contribution to world price changes stemming from trade liberalization was largest for wheat, followed by pork and coarse grains. It was negligible for dairy, beef, and soybeans.

CONCLUSIONS

Government support of producers, as measured by PSE's, varies significantly by commodity. The dairy PSE was highest during 1981-86, as measured by absolute policy transfers, transfers per ton of milk produced, and as a ratio of transfers to producer value. The dairy PSE rate of growth was slower than most commodities, reflecting a stable policy regime that was not significantly altered during the period measured. The poultry PSE peaked in 1982/83, then declined. It was significantly affected by the appreciation of the U.S. dollar, which narrowed the differential between Canadian and U.S. prices.

PSE's for western grains and oilseeds--wheat, barley, oats, rye, rapeseed, and flaxseed--were moderate on average but trended upward during the period. Absolute support for wheat was the second highest, and support per ton produced was also among the highest. The PSE for sugar was the most variable, although on average support was moderate. Producer support for corn, soybeans, beef, and pork was low and stable. A weighted average PSE for all commodities over the 6-year period was about 25 percent, meaning government support accounted for about a quarter of the value of agricultural production.

Several key policy changes since 1986 have been made in response to falling world prices and increasing financial stress in the farm sector. As a result, producer support for 1986/87 and 1987/88 is estimated to increase significantly for western grains and oilseeds. The Federal Government has instituted new policies or modified old ones so that these commodities benefit

the most. Transportation subsidies were the most important source of support during 1981-86, but price/income mechanisms have now become more important.

Changes in other policies, such as tripartite stabilization plans for red meat and sugar producers, have not yet resulted in large payments. Provincial programs have become increasingly important in providing support to producers.

CSE's for crops, beef, and pork were low, meaning consumers' costs were not significantly affected by government policies. However, CSE's for dairy products and poultry were highly negative since consumers bear most of the cost of producer support under the supply-management systems. Overall, a weighted average CSE was only -9 percent, indicating that taxes on consumers were low.

PSE's indicate how producers of different commodities might fare if agricultural trade were liberalized and government subsidies reduced. For grains and oilseeds, Canada would likely benefit from reduced world protectionism and subsidies because increased export sales would more than compensate producers for their loss of government support. Livestock producers receive limited Federal support, although provincial programs have been significant. Canadian producers are likely to increase exports if agricultural subsidies are removed and trade is liberalized on a multilateral basis.

The benefits of trade liberalization to producers of grains, oilseeds, beef, and pork would come primarily from higher world prices, due to the elimination of price-depressing export subsidies, and from improved market access. Because consumers of these commodities are only lightly taxed through various border restrictions, they would not see significant benefits as a result of freer trade.

Policies for those sectors that are designed to serve only the domestic market, notably dairy and poultry, limit competition through fixed prices and import quotas. If the systems were changed and the border opened to imports at world prices, substantial structural adjustment would follow. Consumers would benefit from increased supplies and lower prices.

REFERENCES

1. Agriculture Canada. Annual Livestock Review, various issues.

2. _____. Annual Poultry Review, various issues.

3. _____. Canada's Trade in Agricultural Products, various issues.

4. _____. Food Market Commentary, various issues.

5. _____. Market Commentary, various issues.

6. _____. Handbook of Food Expenditures, Prices, and Consumption. Nov. 1986.

7. _____. Handbook of Selected Agricultural Statistics 1986. Regional Development Branch. Dec. 1986.

8. _____. Tariffs on Selected Agricultural Products. June 1980.

9. Barichello, Richard R. The Economics of Canadian Dairy Industry Regulation. Technical Report No. E/1 2, Economic Council of Canada. Mar. 1981.

10. Canada Grains Council. Statistical Handbook. Winnipeg, Manitoba, various issues.

11. _____. Government Policies Supporting Grain Production and Marketing, Canada and the United States. Winnipeg, Manitoba. Oct. 1986.

12. Canadian Dairy Commission, annual reports, various issues.

13. Canadian Wheat Board, annual reports, various issues.

14. Carter, C.A., and M.E. Glenn. U.S. and Canadian Grain Producers Subsidies: Their Level and International Implications. Department of Agricultural Economics, University of Manitoba. Dec. 1983.

15. Harvey, D.R. Government Intervention and Regulation in the Canadian Grains Industry. Technical Report E/1 6, Economic Council of Canada. June 1981.

16. Josling, Tim. Intervention and Regulation in Canadian Agriculture: A Comparison of Costs and Benefits Among Sectors. Technical Report No. E/1 4, Economic Council of Canada. Mar. 1981.

17. Livestock Feed Board of Canada, annual reports, various issues.

18. Organization for Economic Cooperation and Development. National Policies and Agricultural Trade. Paris, 1987.

19. Rodier, Monique. Federal Agri-Food Expenditures, 1982/83 and 1983/84. Regional Development Branch, Agriculture Canada. Sept. 1985.

20. _____. "Federal Government Expenditures in the Agri-Food Industry, 1970-71 to 1982-83," Canadian Farm Economics, Vol. 19, No. 1, 1985.

21. Roningen, Vernon, John Sullivan, and John Wainio. "The Impact of Support to Agriculture in Developed Countries." Paper presented at the American Agricultural Economics Association meetings, East Lansing, MI, Aug. 1987.

22. Statistics Canada. Agriculture Economic Statistics. Catalogue 21-603E. Feb. 1987.

23. _____. Cereal and Oilseeds Review. Catalogue 22-007, various issues.

24. _____. Livestock and Animal Product Statistics. Catalogue 23-202, July 1987.

25. _____. Production of Poultry and Eggs. Catalogue 23-202. June 1987.

26. _____. The Dairy Review. Catalogue 23-001, various issues.

27. Tariff Board. The Canadian Natural Sweetener Industry. Reference 164. Minister of Supply and Services, Ottawa, Canada, 1987.

28. Todd, Susan. "Federal Agri-Food Expenditures, 1984/85 and 1985/86," unpublished computer printouts, Agriculture Canada.

29. U.S. Department of Agriculture, Economic Research Service. Agricultural Outlook, various issues.

30. _____. Consortium on Trade Research, Agriculture, Trade, and Development: A Comparative Look at U.S., Canadian, and European Community Policies. ERS Staff Report No. AGES850208. Jan. 1986.

31. _____. Government Intervention in Agriculture: Measurement, Evaluation, and Implications for Trade Negotiations. FAER-229. Apr. 1987.

32. _____, Foreign Agricultural Service. "Market Promotion/Competition Annual," attache report, various issues.

APPENDIX 1: PSE/CSE METHODOLOGY 1/

Tim Josling developed the PSE/CSE approach to measure the support implied by government intervention in agriculture.1/ Josling's method was expanded in a recent study of agricultural policies undertaken by the Agricultural Secretariat of the Organization for Economic Cooperation and Development (OECD) (18). Josling's approach rests on the proposition that many aspects of government policies can be reduced to: (1) the level of subsidy that would be necessary to compensate producers (in terms of income) for removing government support under current programs, and (2) the level of subsidy that would have to be paid to consumers to compensate them for removing agricultural programs. Taken together, these two measures indicate the net transfer from other sectors, through the government, into the agricultural sector.

Definition of Producer and Consumer Subsidy Equivalents

A PSE is typically the summation of the effects of many types of government policies. PSE components are derived in two ways: (1) from budgetary expenditures on government policies or (2) from the wedge that a policy instrument drives between domestic and external prices. CSE's generally estimate the effects on consumers of policies that separate domestic and external prices. CSE's also include policies that usually have a direct impact on consumers rather than producers, such as expenditures on school lunch programs. Where policy instruments are functionally linked, such that they jointly affect producers (consumers), PSE's (CSE's) measure the net effect of the package of policies. PSE's do this by using internal/external price differences rather than by attempting to isolate the effect of each policy instrument. For example, many governments intervene in the dairy sector through minimum price policies that are, supported by border measures such as tariffs or quotas.

The PSE is a broader measure than a nominal rate of protection because it includes both the transfers arising from internal and external price differences and the value of direct government assistance. The PSE is not a net measure like an effective rate of protection because it does not take into account protection accorded to other sectors or commodities that raise input prices paid by producers. For example, as used here the PSE does not net out higher prices paid by livestock producers as a result of grain programs that raise grain prices, or the additional costs of fertilizer or machinery resulting from a tariff.

PSE's and CSE's are based on prices, production, consumption, and trade under current policy conditions. When examined across countries or commodity markets, PSE's and CSE's show the relative importance of government policy in terms of its contribution to farmer revenues and consumer costs. When examined over time, PSE's and CSE's show changing government involvement in the agricultural sector. Changes in PSE's and CSE's are usually due to country policy changes or to changes in world reference prices or exchange rates. These measures can be quite variable over time. PSE's and CSE's do not directly reveal the effects on production, consumption, and trade of removing government intervention from agricultural markets.

1/ This information is taken primarily from (18, 31).

Procedure for Estimating PSE's and CSE's

Various kinds of policies that produce similar effects can be measured using the same conceptual approach and similar data under the PSE methodology. Using a standard method permits quantitative comparisons among countries, commodities, and policies. However, trade effects may differ with the same PSE because of differing policy mixes or differing producer responses to policy changes.

Two basic methods are used to derive the value of total policy transfers: (1) government expenditure data or financial data are used to estimate the effects of some program or policy, and (2) the effects of other programs are measured by comparing the supported domestic market price with an external reference price. In some cases, government budget data can be incorporated directly into the PSE estimate for a particular commodity. In other cases, government budget data represent the aggregate amount given to a particular function, such as research or extension services. In these cases, the budget data are allocated across all commodities that receive support according to each commodity's share of agricultural output by value.

Products with import barriers generally fall into two categories:

- Products protected with import tariffs. A per-unit value of the tariff is applied to all domestic production of the product.

- Products protected with import quotas that are coupled with domestic price supports or production quotas. For these products, domestic-supported prices are compared with external reference prices. The differences are then applied to all domestic production.

The CSE estimate is expressed at the wholesale level for grains and at the retail level for meats, dairy products, and sugar. The CSE is negative (representing a consumer tax) for products with import barriers, export subsidies, or high-internal prices relative to world prices. Export taxes or export quotas imply positive CSE's (representing consumer subsidies); however, these policies are not used in Canada. CSE's may be either positive or negative for products under a two-price system, depending on the relationship between the domestic price and world price. The CSE measure also can be derived from the support that is attributed to market price support used in the PSE measure.

Measurement Issues

Comparing domestic prices with external reference prices is a major technique used in the PSE/CSE approach, as well as in other measures of protection. Such comparisons raise a number of issues that should be considered when interpreting PSE and CSE estimates.

External reference prices are derived from observed market prices, which include effects of government policy actions in agricultural and financial markets. External reference prices vary as a result of exchange rate changes that may be entirely unrelated to behavior in agricultural markets. During the first half of the eighties, the value of the U.S. dollar appreciated considerably relative to other currencies. Almost all traded commodities are priced in U.S. dollars, no matter who the seller is. Thus, when the value of the dollar appreciates, external reference prices in countries other than the

United States rise and the price differential between domestic prices and external reference prices are narrower than they would have been under a constant U.S. exchange rate.

A second but related problem is that the PSE and CSE measures do not capture large-country effects on world reference prices. The large-country issue is particularly relevant in interpreting the PSE estimates for grains. The United States unilaterally reduced acreages and increased stocks of grains during the first half of the eighties, thereby keeping world prices near the loan rate. The PSE estimates do not identify the benefit to grain producers in other countries stemming from U.S. support of world market prices.

Another problem is that each dollar of income transferred to producers or consumers, regardless of the program or policy that generated the transfer, is treated the same. Thus, a dollar of income transferred through a tariff is considered equal to a dollar of income spent by the government on a commodity research program. These transfers would have quite different impacts on producer income, especially considering long- versus short-term effects.

APPENDIX 2: DATA AND SOURCES USED TO CALCULATE PRODUCER AND CONSUMER VALUE

Wheat PSE

Production	Source: (23).
Producer price	No. 1 Canadian Western Red Spring, CWB payments to producers, in store Thunder Bay or Vancouver (13).
Direct deductions	Deductions for freight, elevation, dockage (13).
Adjusted price	Producer price minus direct deductions.
Direct payments	ASA payments for Winter wheat; WGSP net payments; crop insurance net payments.
Producer value	Production times adjusted price plus net direct payments.

Barley PSE

Production	Same as wheat.
Producer price	No. 1 feed, CWB payments to producers, in store Thunder Bay (13).
Direct deductions	Same as wheat.
Adjusted price	Same as wheat.
Direct payments	WGSP net payments, crop insurance net payments, plus Can$8 million for corn competitive policy in 1982/83.
Producer value	Same as wheat.

Oats PSE

Production	Same as wheat.
Producer price	No. 1 feed, CWB payments to producers, in store Thunder Bay (13).
Direct deductions	Same as wheat.
Adjusted price	Same as wheat.
Direct payments	WGSP net payments, crop insurance net payments.
Producer value	Same as wheat.

Rye PSE

Production	Same as wheat.
Producer price	Weighted average price received by western farmers (10).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	Same as oats.
Producer value	Same as wheat.

Rapeseed PSE

Production	Same as wheat.
Producer price	Weighted average price received by western farmers (10).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	Same as oats.
Producer value	Same as wheat.

Flaxseed PSE

Production	Same as wheat.
Producer price	Weighted average price received by western farmers (10).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	Same as oats.
Producer value	Same as wheat.

Corn PSE

Production	Same as wheat.
Producer price	No. 2, basis track Chatham (23).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	ASA payments.
Producer value	Same as wheat.

Soybeans PSE

Production	Same as wheat.
Producer price	No. 2, basis track Chatham (23).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	ASA payments.
Producer value	Same as wheat.

Sugar PSE

Production	Same as wheat.
Producer price	Grower price for beets (5).
Direct deductions	None.
Adjusted price	Same as wheat.
Direct payments	ASA payments, plus special planting assistance in 1985/86 and 1986/87.
Producer value	Same as wheat.

Beef PSE

Production	Beef and veal, cold dressed weight (24).
Producer price	Toronto and Winnipeg A1, A2 steer price weighted by slaughter (app. table 12, 1).
Direct deductions	None.
Adjusted price	Same as wheat.
Value of live exports	Multiplied number of animals exported by an average weight per animal and an average price (app. table 13, 1).
Direct payments	None.
Producer value	Production times adjusted price plus value of live exports and direct payments.

Pork PSE

Production	Beef and veal, cold trimmed weight (24).
Producer price	Toronto and Winnipeg Index 100 price weighted by slaughter (app. table 15, 1).
Direct deductions	None.
Adjusted price	Same as wheat.
Value of live exports	App. table 16.
Direct payments	None.
Producer value	Same as beef.

Poultry PSE

Production	Broilers, turkeys, and other chicken (21).
Producer price	Toronto broiler and turkey prices weighted by slaughter (app. table 18, 1).
Direct deductions	None.

Adjusted price	Same as wheat.
Direct payments	None.
Producer value	Same as wheat.

Dairy PSE

Production	Milk sold at the farm as indicated by first buyer. Does not include milk used on farm (5).
Producer price	Manufacturing--target returns level (12); fluid--average farm price from Agriculture Canada.
Direct deductions	Levies--in-quota, over-quota, and skim-off. Total levies divided by total milk shipments (12). No deductions for fluid milk.
Adjusted price	Producer price minus levies.
Direct payments	Direct payments to producers of manufacturing milk and cream are included in the producer price.
Producer value	Sum of manufacturing milk production times adjusted price plus fluid milk production times fluid price.

Wheat CSE

Consumption	Human, feed, industrial use (23).
Wholesale price	Weighted average price for feed and food use. Feed--average price received by western farmers for nonboard feed wheat. Food--CWB domestic mill price (app. table 23, 10, 24).
Consumer value	Consumption times wholesale price.

Barley CSE

Consumption	Feed, waste, dockage (23).
Wholesale price	Cash grain price, No. feed barley, Winnipeg (10, 23).
Consumer value	Consumption times wholesale price.

Corn CSE

Consumption	Feed, waste, dockage; human and industrial use (23).
Wholesale price	Monthly average feed ingredient prices, in-store Montreal (18).
Consumer value	Consumption times wholesale price.

Sugar CSE

Consumption	Total shipments of beet and cane refined sugar (27).
Retail price	26-city weighted average retail price (6). 1986 estimated from CPI for sugar (4).
Consumer value	Consumption times retail price.

Beef CSE

Consumption	Beef and veal domestic disappearance (24).
Retail price	Average Toronto-Winnipeg retail price, based on A1 steer price less byproduct values adjusted by wholesale and retail price spreads. 1980 and 1981 estimated from CPI for beef (4).
Consumer value	Consumption times retail price.

Pork CSE

Consumption	Domestic disappearance (24).
Retail price	26-city weighted average for five types of pork cuts (6). 1986 estimated from CPI for pork (4).
Consumer value	Consumption times retail price.

Poultry CSE

Consumption	Domestic disappearance of all chicken and turkey (25).
Retail price	Average Toronto chicken and turkey price weighted by consumption. Based on producer price adjusted by wholesale and retail price spreads (4).
Consumer value	Consumption times retail price.

Cheese CSE

Consumption	Cheddar and variety cheese (5).
Retail price	Weighted average cheddar and process cheese price (app. table 32, 5, 6). 1986 estimated from CPI for cheese (4).
Consumer value	Consumption times retail price.

Fluid milk CSE

Consumption	Same as fluid production (5).
Retail price	26-city weighted average retail price (6). 1986 estimated from CPI for milk (4).
Consumer value	Consumption times retail price.

Butter/SMP CSE

Consumption	Domestic disappearance. Data not available on human versus feed use (5).
Retail price	26-city weighted average retail price (6). 1986 estimated from CPI for butter and SMP (4).
Consumer value	Consumption times retail price.

Appendix table 1--Weighting factors by cash receipts 1/

Commodity	1980	1981	1982	1983	1984	1985	1986
				Ratio			
Wheat (Mil. Can$)	3,208	4,416	4,025	4,254	4,192	3,075	2,817
Weighting factor 1	0.21	0.25	0.23	0.24	0.22	0.17	0.16
Weighting factor 2	0.45	0.49	0.48	0.47	0.46	0.39	0.37
Weighting factor 4	0.67	0.71	0.70	0.69	0.69	0.62	0.63
Barley (Mil. Can$)	600	927	907	920	690	678	775
Weighting factor 1	0.04	0.05	0.05	0.05	0.04	0.04	0.04
Weighting factor 2	0.08	0.10	0.11	0.10	0.08	0.09	0.10
Weighting factor 4	0.12	0.15	0.16	0.15	0.11	0.14	0.17
Rapeseed (Mil. Can$)	674	597	599	736	935	906	699
Weighting factor 1	0.04	0.03	0.03	0.04	0.05	0.05	0.04
Weighting factor 2	0.09	0.07	0.07	0.08	0.10	0.12	0.09
Weighting factor 4	0.14	0.10	0.10	0.12	0.15	0.18	0.16
Corn (Mil. Can$)	467	448	418	598	568	575	414
Weighting factor 1	0.03	0.03	0.02	0.03	0.03	0.03	0.02
Weighting factor 2	0.07	0.05	0.05	0.07	0.06	0.07	0.06
Oats (Mil. Can$)	54	59	55	58	65	55	48
Weighting factor 1	0	0	0	0	0	0	0
Weighting factor 2	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Weighting factor 4	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Rye (Mil. Can$)	82	76	57	67	56	30	25
Weighting factor 1	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Weighting factor 2	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Weighting factor 4	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Flaxseed (Mil. Can$)	188	130	114	170	156	194	135
Weighting factor 1	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Weighting factor 2	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Weighting factor 4	0.04	0.02	0.02	0.03	0.03	0.04	0.03
Soybeans (Mil. Can$)	183	167	199	247	205	230	227
Weighting factor 1	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Weighting factor 2	0.03	0.02	0.02	0.03	0.02	0.03	0.03
Sugar beets (Mil. Can$)	73	63	34	45	31	12	17
Weighting factor 1	0	0	0	0	0	0	0
Weighting factor 2	0.01	0.01	0	0.01	0	0	0

1/ Cash receipts from farming. For any 1 year, the weights sum to less than than 1 because the PSE commodities do not account for total cash receipts.

Appendex table 1--Weighting factors by cash receipts (con't)

Commodity	1980	1981	1982	1983	1984	1985	1986
				Ratio			
Cattle and calves	3,648	3,440	3,499	3,415	3,557	3,589	3,553
Weighting factor 1	0.24	0.19	0.20	0.19	0.19	0.20	0.20
Weighting factor 3	0.44	0.39	0.37	0.38	0.36	0.37	0.34
Hogs	1,404	1,618	1,952	1,713	1,888	1,822	2,095
Weighting factor 1	0.09	0.09	0.11	0.10	0.10	0.10	0.12
Weighting factor 3	0.17	0.18	0.21	0.19	0.19	0.19	0.20
Poultry	670	777	774	767	889	901	941
Weighting factor 1	0.04	0.04	0.04	0.04	0.05	0.05	0.05
Weighting factor 3	0.08	0.09	0.08	0.08	0.09	0.09	0.09
Dairy	2,015	2,315	2,830	2,730	2,989	2,716	2,779
Weighting factor 1	0.13	0.13	0.16	0.15	0.16	0.15	0.15
Weighting factor 3	0.24	0.26	0.30	0.30	0.31	0.28	0.26
				Million Canadian dollars			
Total cash receipts (WF1)	15,425	17,817	17,773	18,025	18,905	17,623	18,115
Total crops (WF2)	7,104	8,993	8,374	8,984	9,144	7,871	7,513
Total livestock (WF3)	8,321	8,824	9,399	9,041	9,761	9,752	10,602
WGSP crops only (WF4)	4,806	6,205	5,757	6,205	6,094	4,938	4,499
PSE crops	5,529	6,883	6,408	7,095	6,898	5,755	5,157
Share of crops (pct.)	77.8	76.5	76.5	79.0	75.4	73.1	68.6
PSE livestock	7,737	8,150	9,055	8,625	9,323	9,028	9,368
Share of livestock (pct.)	93.0	92.4	96.3	95.4	95.5	92.6	88.4
PSE commodities as share of total cash receipts (pct.)	86.0	84.4	87.0	87.2	85.8	83.9	80.2

Appendix table 2--Wheat: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Candian dollars			
Production (mil. tons)	19.3	24.8	26.7	26.5	21.2	24.3
Adjusted price ($/mt)	211.05	188.10	180.22	181.36	171.57	146.54
Producer price ($/mt)	222.12	199.62	192.34	193.98	186.37	160.00
Direct deductions ($/mt)	11.07	11.52	12.12	12.62	14.80	13.46
Direct payments	42.1	-16.7	23.1	186.4	502.5	728.0
Producer value	4,115.3	4,648.2	4,834.9	4,992.4	4,139.8	4,289.0
Policy transfers:						
Income/price support	42.2	-3.1	24.6	189.8	484.9	733.0
ASA payments	0.3	0	0	10.8	0	0
WGSP	-32.2	-40.1	-38.8	108.1	327.8	516.3
Crop insurance	74.0	23.5	61.9	67.5	174.7	211.7
CWB pool deficit	0	0	0	0	0	23.0
Export credits	16.6	21.8	11.1	6.5	4.6	1.2
Corn competitive	-3.5	-14.2	-8.6	0.1	-0.8	0
Two-price wheat	-13.0	6.0	-1.0	-3.2	-21.4	-19.2
Input subsidies	18.5	88.6	25.0	27.4	38.9	87.4
Fuel subsidy	14.1	13.4	13.1	13.5	20.4	39.8
Other assistance	4.4	75.3	11.9	13.9	18.6	47.5
Marketing subsidies	236.1	270.3	454.8	609.3	683.5	463.2
Transportation	215.9	247.2	422.4	574.2	645.9	433.9
Inspection services	19.3	20.3	29.6	31.7	32.1	26.7
Marketing/promotion	0.8	2.8	2.9	3.4	5.5	2.6
Long-term, structural	50.2	68.3	76.6	88.9	96.6	61.9
Research, advisory	26.0	40.1	51.5	61.3	59.6	46.7
Development, structure	24.2	28.3	25.2	27.6	37.0	15.2
Provincial programs	54.8	106.6	100.5	92.5	109.9	106.9
Total transfers	401.8	530.7	681.5	1,007.8	1,413.7	1,452.4
Unit transfers ($/mt)	20.82	21.40	25.52	38.03	66.69	59.77
PSE (pct.)	9.8	11.4	14.1	20.2	34.2	33.9

Appendix table 3--Barley: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (mil. tons)	11.4	13.7	14.0	10.2	10.3	12.4
Adjusted price ($/mt)	134.08	117.92	96.07	123.75	114.83	94.79
Producer price ($/mt)	146.55	131.07	110.00	138.02	131.30	110.00
Direct deductions ($/mt)	12.47	13.15	13.93	14.27	16.47	15.21
Direct payments	7.8	-3.5	13.2	38.0	82.7	160.5
Producer value	1,536.3	1,612.0	1,358.2	1,300.2	1,265.5	1,335.9
Policy transfers:						
Income/price support	52.2	-10.2	23.1	38.0	127.2	404.3
WGSP	-6.0	-8.4	-8.7	23.4	54.0	113.8
Crop insurance	13.8	4.9	13.9	14.6	28.8	46.7
CWB pool deficit	0	0	5.5	0	0.0	171.4
Corn competitive	-0.3	-10.0	4.8	0	-1.8	0
Import licenses	44.7	3.3	7.6	0	46.3	72.4
Input subsidies	3.5	18.6	5.6	5.9	6.4	19.3
Fuel subsidy	2.6	2.8	3.0	2.9	3.4	8.8
Other assistance	0.8	15.8	2.7	3.0	3.1	10.5
Marketing subsidies	44.2	56.7	102.5	131.8	112.5	102.1
Transportation	40.4	51.9	95.2	124.2	106.3	95.7
Inspection services	3.6	4.3	6.7	6.9	5.3	5.9
Marketing/promotion	0.2	0.6	0.6	0.7	0.9	0.6
Long-term, structural	9.4	14.3	17.3	19.2	15.9	13.7
Research, advisory	4.9	8.4	11.6	13.3	9.8	10.3
Development, structure	4.5	5.9	5.7	6.0	6.1	3.3
Provincial programs	10.3	22.4	22.7	20.0	18.1	23.6
Total transfers	119.5	101.9	171.1	214.9	280.1	562.9
Unit transfers ($/mt)	10.48	7.44	12.22	21.07	27.19	45.40
PSE (pct.)	7.8	6.3	12.6	16.5	22.1	42.1

Appendix table 4--Oats: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (mil. tons)	2.9	3.2	3.6	2.8	2.7	3.0
Adjusted price ($/mt)	111.02	94.81	83.40	90.25	93.76	82.51
Producer price ($/mt)	125.39	110.00	99.53	106.61	112.31	100.00
Direct deductions ($/mt)	14.37	15.19	16.13	16.36	18.55	17.49
Direct payments	0.7	-0.2	0.3	2.4	7.8	13.0
Producer value	322.7	303.2	300.6	255.1	261.0	260.6
Policy transfers:						
Income/price support	19.8	-3.3	-1.7	2.4	7.7	19.9
WGSP	-0.5	-0.5	-0.5	1.5	5.1	9.2
Crop insurance	1.2	0.3	0.8	0.9	2.7	3.8
Corn competitive	0.1	-3.1	-2.0	0	-0.1	0
CWB pool deficit	0	0	0	0	0	6.9
Import licenses	19.0	0	0	0	0	0
Input subsidies	0.3	1.2	0.3	0.4	0.6	1.6
Fuel subsidy	0.2	0.2	0.2	0.2	0.3	0.7
Other assistance	0.1	1.0	0.2	0.2	0.3	0.8
Marketing subsidies	4.0	3.6	6.2	8.3	10.6	8.3
Transportation	3.6	3.3	5.7	7.8	10.1	7.8
Inspection services	0.3	0.3	0.4	0.4	0.5	0.5
Marketing/promotion	0	0	0	0	0	0
Long-term, structural	0.8	0.9	1.0	1.2	1.5	1.1
Research, advisory	0.4	0.5	0.7	0.8	0.9	0.8
Development, structure	0.4	0.4	0.3	0.4	0.6	0.3
Provincial programs	0.9	1.4	1.4	1.3	1.7	1.9
Total transfers	25.9	3.8	7.2	13.5	22.2	32.8
Unit transfers ($/mt)	8.92	1.20	2.01	4.81	8.22	10.93
PSE (pct.)	8.0	1.3	2.4	5.3	8.5	12.6

Appendix table 5--Rye: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (1,000 tons)	456	927	933	828	664	598
Adjusted price ($/mt)	176	150	86	110	89	80
Producer price ($/mt)	176	150	86	110	89	80
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	1.1	-0.3	0.3	2.8	6.7	7.1
Producer value	81.3	138.8	80.6	93.8	65.8	54.9
Policy transfers:						
Income/price support	1.1	-0.3	0.3	2.8	6.7	7.1
WGSP	-0.8	-0.7	-0.5	1.7	4.4	5.0
Crop insurance	1.9	0.4	0.9	1.1	2.3	2.1
Input subsidies	0.5	0.4	0.4	0.4	0.5	0.9
Fuel subsidy	0.4	0.2	0.2	0.2	0.3	0.4
Other assistance	0.1	0.2	0.2	0.2	0.2	0.5
Marketing subsidies	6.0	4.7	6.4	9.6	9.1	4.5
Transportation	5.5	4.3	6.0	9.0	8.6	4.2
Inspection services	0.5	0.3	0.4	0.5	0.4	0.3
Marketing/promotion	0	0	0	0.1	0.1	0
Long-term, structural	1.3	1.2	1.1	1.4	1.3	0.6
Research, advisory	0.7	0.7	0.7	1.0	0.8	0.5
Development, structure	0.6	0.5	0.4	0.4	0.5	0.1
Provincial programs	1.4	1.8	1.4	1.5	1.5	1.0
Total transfers	10.3	7.8	9.6	15.6	19.1	14.1
Unit transfers ($/mt)	22.50	8.40	10.32	18.90	28.80	23.61
PSE (pct.)	12.6	5.6	12.0	16.7	29.1	25.7

Appendix table 6--Rapeseed: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
	Million Canadian dollars					
Production (mil. tons)	2.5	1.8	2.2	2.6	3.4	3.5
Adjusted price ($/mt)	280	285	271	382	351	264
Producer price ($/mt)	280	285	271	382	351	264
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	8.8	-2.3	3.4	30.4	112.1	214.5
Producer value	708.8	510.7	599.6	1,023.6	1,305.5	1,138.5
Policy transfers:						
Income/price support	8.8	-2.3	3.4	30.4	112.1	214.5
WGSP	-6.8	-5.4	-5.8	18.7	73.1	152.1
Crop insurance	15.6	3.2	9.2	11.7	39.0	62.4
Input subsidies	3.4	2.5	2.8	3.5	6.5	18.0
Fuel subsidy	3.0	1.8	2.0	2.3	4.5	11.7
Other assistance	0.4	0.7	0.8	1.2	2.0	6.3
Marketing subsidies	52.6	39.5	70.7	105.4	152.4	136.5
Transportation	45.4	33.4	62.9	99.4	144.1	127.8
Inspection services	4.1	2.7	4.4	5.5	7.2	7.9
Marketing/promotion	3.2	3.4	3.4	0.6	1.2	0.8
Long-term, structural	10.6	9.2	11.4	15.4	21.5	18.2
Research, advisory	5.5	5.4	7.7	10.6	13.3	13.8
Development, structure	5.1	3.8	3.7	4.8	8.2	4.5
Provincial programs	11.5	14.4	15.0	16.0	24.5	31.5
Total transfers	86.8	63.5	103.3	170.7	317.1	418.7
Unit transfers ($/mt)	34.74	35.25	46.94	65.66	93.27	119.63
PSE (pct.)	12.3	12.4	17.2	16.7	24.3	36.8

Appendix table 7--Flaxseed: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (1,000 tons)	442	468	752	444	694	902
Adjusted price ($/mt)	325	324	245	323	316	263
Producer price ($/mt)	325	324	245	323	316	263
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	3.1	-0.1	1.0	5.7	14.6	33.8
Producer value	146.7	151.5	185.2	149.1	233.9	271.0
Policy transfers:						
Income/price support	3.1	-0.1	1.0	5.7	14.6	33.8
WGSP	-1.3	-0.8	-0.8	3.0	8.1	20.4
Crop insurance	4.3	0.7	1.8	2.7	6.5	13.4
Input subsidies	1.1	0.7	0.7	1.1	1.4	5.5
Fuel subsidy	0.8	0.4	0.4	0.5	0.8	2.5
Other assistance	0.3	0.3	0.3	0.6	0.7	3.0
Marketing subsidies	9.7	5.7	9.1	17.3	17.4	19.0
Transportation	8.6	5.0	8.2	15.8	16.0	17.2
Inspection services	1.1	0.6	0.8	1.3	1.2	1.7
Marketing/promotion	0	0.1	0.1	0.1	0.2	0.2
Long-term, structural	2.9	2.0	2.2	3.6	3.6	3.9
Research, advisory	1.5	1.2	1.5	2.4	2.2	2.9
Development, structure	1.4	0.8	0.7	1.1	1.4	1.0
Provincial programs	3.2	3.1	2.8	3.7	4.1	6.7
Total transfers	20.0	11.4	15.9	31.3	41.2	69.0
Unit transfers ($/mt)	0.05	0.02	0.02	0.07	0.06	0.08
PSE (pct.)	13.7	7.5	8.6	21.0	17.6	25.5

Appendix table 8--Corn: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (mil. tons)	5.8	6.7	6.5	5.9	7.0	7.5
Adjusted price ($/mt)	152	115	112	160	139	115
Producer price ($/mt)	152	115	112	160	139	115
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	5.3	1.3	3.2	5.7	13.7	4.3
Producer value	886.9	771.8	731.2	949.7	986.7	866.8
Policy transfers:						
Income/price support	22.3	20.1	20.4	20.4	30.1	20.8
ASA payments	0.3	0.1	0.2	1.0	12.5	0.3
Crop insurance	5.0	1.2	3.0	4.7	1.2	4.0
Tariff	17.0	18.8	17.2	14.6	16.4	16.5
Input subsidies	11.9	11.0	4.4	2.9	3.8	12.2
Fuel subsidy	0.9	0.7	0.6	0.9	1.3	3.3
Feed freight adj. fund	10.3	9.2	2.5	0	0	0
Other assistance	0.6	1.1	1.2	2.0	2.5	8.9
Marketing subsidies	8.3	8.3	11.6	17.8	17.4	20.0
Inspection services	8.2	8.1	11.3	17.3	16.7	19.6
Marketing/promotion	0.1	0.3	0.3	0.5	0.7	0.5
Long-term, structural	7.3	6.9	8.0	12.5	13.1	11.6
Research, advisory	3.8	4.1	5.3	8.6	8.1	8.7
Development, structure	3.5	2.9	2.6	3.9	5.0	2.8
Provincial programs	8.0	10.8	10.4	13.0	14.9	20.0
Total transfers	57.8	57.1	54.8	66.5	79.4	84.6
Unit transfers ($/mt)	9.96	8.52	8.43	11.27	11.34	11.28
PSE (pct.)	6.5	7.4	7.5	7.0	8.0	9.8

Appendix table 9--Soybeans: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (1,000 tons)	690	607	848	735	944	1,048
Adjusted price ($/mt)	313	264	250	346	272	242
Producer price ($/mt)	313	264	250	346	272	242
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	4.2	0.9	4.7	14.8	8.7	15.8
Producer value	220.2	161.1	216.7	268.9	265.9	269.5
Policy transfers:						
Income/price support	4.2	0.9	4.7	14.8	8.7	15.8
ASA payments	0	0	1.6	10.9	0.2	0
Crop insurance	4.2	0.9	3.1	3.9	8.5	15.8
Input subsidies	1.1	0.9	1.2	1.6	1.9	6.5
Fuel subsidy	0.8	0.5	0.6	0.8	1.0	3.0
Other assistance	0.2	0.4	0.6	0.8	0.9	3.6
Marketing subsidies	1.1	0.9	1.6	2.0	1.8	2.2
Inspection services	1.1	0.8	1.5	1.8	1.6	2.0
Marketing/promotion	0	0.1	0.1	0.2	0.3	0.2
Long-term, structural	2.9	2.6	3.8	5.2	4.7	4.6
Research, advisory	1.5	1.5	2.5	3.6	2.9	3.5
Development, structure	1.4	1.1	1.2	1.6	1.8	1.1
Provincial programs	3.1	4.0	5.0	5.4	5.4	8.0
Total transfers	12.4	9.3	16.3	29.0	22.6	37.2
Unit transfers ($/mt)	18.00	15.29	19.17	39.42	23.92	35.49
PSE (pct.)	5.6	5.8	7.5	10.8	8.5	13.8

Appendix table 10--Sugar: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (1,000 tons)	881	1,215	1,041	1,167	932	400
Adjusted price ($/mt)	61.91	38.86	40	33.81	29.39	21.84
Producer price ($/mt)	61.91	38.86	40.00	33.81	29.39	21.84
Direct deductions ($/mt	0	0	0	0	0	0
Direct payments	1.7	7.2	0.5	6.6	13.2	7.5
Producer value	56.2	54.4	42.2	46.1	40.6	16.3
Policy transfers:						
Income/price support	3.0	8.1	1.4	7.4	12.1	3.7
ASA payments	0	6.9	0	5.9	10.2	2.4
Crop insurance	1.7	0.3	0.5	0.7	1.3	0.8
Tariff	1.4	0.9	0.9	0.7	0.6	0.5
Input subsidies	0.4	0.3	0.2	0.3	0.3	8.3
Fuel subsidy	0.3	0.2	0.1	0.1	0.2	0.2
Other assistance	0.1	0.2	0.1	0.1	0.1	8.2
Marketing subsidies	0	0	0	0	0	0
Long-term, structural	1.1	1.0	0.6	0.9	0.7	0.2
Research, advisory	0.6	0.6	0.4	0.6	0.4	0.2
Development, structur	0.6	0.4	0.2	0.3	0.3	0.1
Provincial programs	1.2	1.5	0.8	1.0	2.5	4.7
Total transfers	5.9	10.9	3.1	9.6	15.7	17.0
Unit transfers ($/mt)	6.65	8.99	2.99	8.20	16.80	42.52
PSE (pct.)	10.4	20.1	7.4	20.8	38.6	104.6

Appendix table 11--Beef: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (1,000 tons)	971	1,016	1,032	1,036	997	1035
Adjusted price ($/mt) 1/	2,838	2,819	2,800	2,737	2,909	2,832
Producer price ($/mt)	2,838	2,819	2,800	2,737	2,909	2,832
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	0	0	0	0	0	9.7
Value of live exports 2/	135.2	116.4	179.6	144.9	198.9	206.1
Producer value	2,891.1	2,981.0	3,068.8	2,980.6	3,099.7	3,146.7
Policy transfers:						
Income-price support	42.8	44.8	45.5	45.7	44.0	55.3
ASA payments	0	0	0	0	0	9.7
Tariff	42.8	44.8	45.5	45.7	44.0	45.6
Input subsidies	31.6	7.7	5.7	6.3	16.6	28.3
Feed freight asst.	7.9	6.8	5.7	6.3	6.8	5.6
Other assistance	23.7	0.9	0	0	9.8	22.7
Marketing subsidies	56.4	52.5	69.0	74.1	79.2	91.1
Inspection services	55.5	50.4	66.6	71.4	74.7	88.4
Marketing/promotion	0.9	2.1	2.5	2.7	4.5	2.7
Long-term, structural	55.5	50.7	65.4	70.5	79.1	65.6
Research, advisory	28.7	29.7	43.9	48.6	48.8	49.5
Development, structure	26.8	21.0	21.5	21.9	30.3	16.1
Provincial programs	60.6	79.2	85.7	73.3	90.0	113.4
Total transfers	246.9	234.9	271.4	269.9	308.9	353.8
Unit transfers ($/mt)	254.25	231.19	262.98	260.55	309.87	341.82
PSE (pct.)	8.5	7.9	8.8	9.1	10.0	11.2

1/ See appendix table 12.
2/ See appendix table 13.

Appendix table 12--Canada: Weighted average producer price for cattle

Year	Price A1, A2 steers		Steer slaughter		Weighted price	Weighted price carcass weight
	Toronto	Calgary	East	West		
	-----Can$/cwt-----		pct. of total		Can$/cwt	Mt
1980	80.74	74.59	0.41	0.59	77.11	2,838
1981	80.00	73.93	0.44	0.56	76.60	2,819
1982	80.54	73.08	0.40	0.60	76.06	2,800
1983	78.98	71.54	0.38	0.62	74.37	2,737
1984	85.30	75.53	0.36	0.64	79.05	2,909
1985	81.63	74.18	0.37	0.63	76.94	2,832
1986	82.66	72.22	0.37	0.63	.76.08	2,800

Source: (1).

Appendix table 13--Value of Canadian livestock exports

Year	Class	Weight	Number	Price	Value	Year	Class	Weight	Number	Price	Value
		lbs.		Can$/cwt	Mil. Can$			lbs.		Can$/cwt	Mil. Can$
1980	Slaughter cattle 1/	1,500	104,771	56.47	88.7	1984	Slaughter cattle	1,500	216,050	53.32	172.8
	Slaughter calves 2/	400	6,237	74.11	1.8		Slaughter calves	400	51,341	73.44	15.1
	Feeder cattle 3/	900	29,990	78.69	21.2		Feeder cattle	900	12,606	80.40	9.1
	Feeder calves 4/	550	49,053	86.43	23.3		Feeder calves	550	4,004	87.12	1.9
	Total		190,051		135.2		TOTAL		284,001		198.9
1981	Slaughter cattle	1,500	93,161	52.80	73.8	1985	Slaughter cattle	1,500	157,257	52.18	123.1
	Slaughter calves	400	63,382	65.64	16.6		Slaughter calves	400	24,481	73.20	7.2
	Feeder cattle	900	27,791	74.86	18.7		Feeder cattle	900	100,859	81.59	74.1
	Feeder calves	550	16,964	77.98	7.3		Feeder calves	550	3,691	88.50	1.8
	Total		201,298		116.4		TOTAL		286,288		206.1
1982	Slaughter cattle	1,500	149,231	50.42	112.9	1986	Slaughter cattle	1,500	156,591	52.71	123.8
	Slaughter calves	400	50,270	65.92	13.3		Slaughter calves	400	18,798	78.66	5.9
	Feeder cattle	900	69,730	75.90	47.6		Feeder cattle	900	5,409	84.40	4.1
	Feeder calves	550	13,435	78.93	5.8		Feeder calves	550	565	97.28	0.3
	Total		282,666		179.6		TOTAL		181,363		134.1
1983	Slaughter cattle	1,500	161,915	50.85	123.5						
	Slaughter calves	400	46,796	68.95	12.9						
	Feeder cattle	900	10,866	76.43	7.5						
	Feeder calves	550	2,112	86.31	1.0						
	Total		221,689		144.9						

1/ Toronto, D1,2 cows.
2/ Toronto, slaughter calves.
3/ Toronto, feeder steers, over 800 pounds.
4/ Toronto, feeder steer calves, 500-600 pounds.

Source: (1).

Appendix table 14--Pork: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
	Million Canadian dollars					
Production (1,000 tons)	856	840	833	852	863	900.4
Adjusted price ($/mt) 1/	1,287	1,527	1,820	1,545	1,584	1,494
Producer price ($/mt)	1,287	1,527	1,820	1,545	1,584	1,494
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	41.3	107.3	0.5	0.01	56.6	14.9
Value of live exports 2/	18.1	10.2	55.4	70.8	213.0	151.1
Producer value	1,161.3	1,400.1	1,572.2	1,387.5	1,636.9	1,511.2
Policy transfers:						
Price/income support	50.7	116.5	9.7	9.4	66.1	24.8
ASA payments	41.3	107.3	0.5	0	56.6	14.9
Tariff	9.4	9.2	9.2	9.4	9.5	9.9
Input subsidies	12.2	3.6	3.2	3.2	8.8	14.4
Feed freight asst.	3.0	3.2	3.2	3.2	3.6	2.8
Other assistance	9.1	0.4	0	0	5.2	11.5
Marketing subsidies	21.7	24.7	38.5	37.2	42.0	46.3
Inspection services	21.3	23.7	37.2	35.8	39.6	44.9
Marketing/promotion	0.4	1.0	1.4	1.3	2.4	1.4
Long-term, structural	21.4	23.0	36.5	35.4	42.0	33.3
Research, advisory	11.1	13.1	24.5	24.4	25.9	25.2
Development, structure	10.3	9.9	12.0	11.0	16.1	8.2
Provincial programs	23.3	37.2	47.8	36.8	47.8	57.6
Total transfers	129.3	205.1	135.7	121.9	206.7	176.3
Unit transfers ($/mt)	150.99	244.14	162.88	143.03	239.56	195.81
PSE (pct.)	11.1	14.6	8.6	8.8	12.6	11.7

1/ See appendix table 15.
2/ See appendix table 16.

Appendix table 15--Weighted producer price for hogs

Year	Index 100 price		Hog slaughter		Weighted price
	Toronto	Winnipeg	East	West	
	-----Can$/cwt-----		Pct. of total		Can$/mt
1980	59.08	56.67	0.72	0.28	1,287
1981	70.01	67.40	0.72	0.28	1,527
1982	83.32	80.61	0.73	0.27	1,820
1983	70.75	68.49	0.72	0.28	1,545
1984	72.65	70.10	0.70	0.30	1,584
1985	68.51	66.25	0.68	0.32	1,494
1986	81.40	81.13	0.68	0.32	1,792

Source: (1).

Appendix table 16--Value of live hog exports

Year	Weight	Number	Price 1/	Value
	lbs	1,000	Can$/cwt	Mil. Can$
1980	220	141	58.41	18.1
1981	220	67	69.28	10.2
1982	220	305	82.59	55.4
1983	220	459	70.12	70.8
1984	220	1,347	71.89	213.0
1985	220	1013	67.79	151.1
1986	220	403	81.31	72.1

1/ Weighted average Toronto/Winnipeg price.
Source: (1).

Appendix table 17--Poultry: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
	Million Canadian dollars					
Production (1,000 tons)	522	527	527	527	559	608
Adjusted price ($/mt) 1/	1,317	1,530	1,498	1,493	1,627	1,501
Producer price ($/mt)	1,317	1,530	1,498	1,493	1,627	1,501
Direct deductions ($/mt)	0	0	0	0	0	0
Direct payments	0	0	0	0	0	0
Producer value	687.7	806.1	789.4	786.6	909.6	912.3
Policy transfers:						
Price/income support	96.4	193.9	184.0	145.4	88.2	38.6
Quota/price support	96.4	193.9	184.0	145.4	88.2	38.6
Input subsidies	1.4	1.5	1.3	1.4	1.7	1.4
Feed freight asst.	1.4	1.5	1.3	1.4	1.7	1.4
Marketing subsidies	14.2	12.3	15.3	16.6	19.8	22.9
Inspection services	10.2	11.4	14.7	16.0	18.7	22.2
Marketing/promotion	4.0	0.9	0.5	0.6	1.1	0.7
Long-term, structural	10.2	11.5	14.5	15.8	19.8	16.5
Research, advisory	5.3	6.7	9.7	10.9	12.2	12.4
Development, structure	4.9	4.7	4.8	4.9	7.6	4.0
Provincial programs	11.1	17.9	19.0	16.5	22.5	28.5
Total transfers	133.3	237.1	234.0	195.8	151.9	107.8
Unit transfers ($/mt)	255.32	449.83	443.99	371.51	271.78	177.29
PSE (pct.)	19.4	29.4	29.6	24.9	16.7	11.8

1/ See appendix table 18.

Appendix table 18--Canada: Weighted producer price for poultry

Year	Broilers 1/			Turkeys 2/			Weighted price
	Live	Evis.	Slaughter	Live	Evis.	Slaughter	
	-----Can$/kg-----		Mt	-----Can$/kg-----		Mt	Can$/mt
1980	0.94	1.250	376,656	1.29	1.574	98,901	1,317
1981	1.10	1.463	387,281	1.48	1.806	93,497	1,530
1982	1.07	1.426	386,463	1.47	1.789	95,997	1,498
1983	1.08	1.434	386,506	1.42	1.730	95,975	1,493
1984	1.18	1.571	421,235	1.54	1.874	96,307	1,627
1985	1.08	1.436	462,347	1.47	1.793	101,316	1,501
1986	1.09	1.450	478,205	1.45	1.769	104,894	1,507

1/ Toronto price, under 2.3 kg.
2/ Toronto price, 5.4 kg and under.
Source: (2).

Appendix table 19--U.S. producer price for poultry

Year	U.S. broiler price				U.S. turkey price			
	Live	Evis.	Evis.	Total 1/	Live	Evis.	Evis.	Total 1/
	-----US$/kg-----		------Can$/kg-----		-----US$/kg-----		-----Can$/kg-----	
1980	0.615	0.818	0.956	1.052	0.882	1.076	1.258	1.384
1981	0.617	0.821	0.984	1.082	0.849	1.036	1.242	1.366
1982	0.591	0.786	0.969	1.066	0.827	1.008	1.244	1.369
1983	0.646	0.859	1.058	1.164	0.804	0.981	1.209	1.330
1984	0.732	0.973	1.260	1.386	1.025	1.250	1.619	1.781
1985	0.666	0.886	1.209	1.330	1.040	1.269	1.732	1.905
1986	0.765	1.017	1.414	1.556	0.974	1.188	1.652	1.817

1/ 10-percent distribution costs added to eviscerated price.
Source: (29).

Appendix table 20--Dairy: Producer subsidy equivalent (PSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
			Million Canadian dollars			
Production (mil. tons)	7.5	7.7	7.7	7.6	7.6	7.3
Manufacturing (mil. tons)	4.8	5.0	5.0	4.9	4.9	4.7
Fluid (mil. tons)	2.7	2.7	2.7	2.7	2.7	2.6
Adj. manf. price ($/mt)	312.33	343.10	355.99	378.98	389.82	400.42
Manufacturing price ($/mt)	342.75	380.04	416.45	433.33	453.35	464.78
Direct deductions ($/mt)	30.42	36.94	60.46	54.35	63.53	64.36
Fluid price ($/mt)	397.09	433.31	460.05	480.03	505.41	523.04
Direct payments	0	0	0	0	0	0
Producer value	2,571.3	2,885.4	3,022.1	3,153.1	3,274.7	3,241.9
Policy transfers:						
Price/income support	1,517.1	1,577.8	1,805.2	2,249.3	2,529.8	2,756.0
Direct payments	287.9	301.5	295.0	347.6	326.5	301.0
Quota/price support	1,000.3	1,032.7	1,229.2	1,628.9	1,891.2	2,111.7
Butter	415.0	413.1	522.5	693.7	858.6	1,081.3
Skim milk powder	585.3	619.6	706.7	935.2	1,032.6	1,030.4
Fluid milk premium	228.9	243.6	281.0	272.8	312.1	343.3
Input subsidies	17.5	5.2	4.6	5.1	14.0	21.4
Feed freight asst.	4.4	4.6	4.6	5.1	5.7	4.2
Other assistance	13.1	0.6	0	0	8.3	17.2
Marketing subsidies	-101.0	-130.3	-211.8	-176.2	-215.8	-207.3
CDC promotion, adm.	3.1	5.7	5.1	7.0	3.7	5.1
Producer levies	-134.7	-169.9	-270.8	-240.3	-282.2	-279.3
Inspection services	30.6	33.9	53.9	57.1	62.7	66.9
Long-term, structural	30.7	32.9	52.9	56.3	66.5	49.7
Research, advisory	15.9	18.8	35.5	38.8	41.0	37.5
Development, structure	14.8	14.1	17.4	17.5	25.5	12.2
Provincial programs	33.5	53.3	69.3	58.6	75.6	85.8
Total transfers	1,497.7	1,538.9	1,720.2	2,193.1	2,470.2	2,705.6
Unit transfers ($/mt)	199.69	199.86	223.40	288.57	325.02	370.63
PSE (pct.)	58.2	53.3	56.9	69.6	75.4	83.5

Appendix table 21--Wheat: Consumers subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (1,000 tons)	4.0	4.0	3.8	4.3	4.0	4.2	5.0
Wholesale price ($/mt) 1/	194	182	167	177	183	177	153
Consumer value	776.0	728.0	634.6	761.1	732.0	743.4	765.0
Policy transfers:							
Two-price wheat	13.0	-6.0	1.0	3.2	21.4	19.2	-152.0
Corn competitive	3.5	14.2	8.6	-0.1	0.8	0.0	0.0
Total transfers	16.5	8.2	9.6	3.1	22.2	19.2	-152.0
Unit transfers ($/mt)	4.13	2.05	2.53	0.72	5.55	4.57	-30.40
CSE (pct.)	2.1	1.1	1.5	0.4	3.0	2.6	-19.9

1/ See appendix table 22.

Appendix table 22--Wheat: Weighted average wholesale price

Year	Consumer price		Consumption			Weighted price
	Food use	Feed use	Food	Feed	Total	
	----Can$/mt----		------1,000 mt------			Can$/mt
1980/81	240	155	1,860	2,167	4,027	194
1981/82	217	147	1,987	2,002	3,989	182
1982/83	204	126	1,999	1,825	3,824	167
1983/84	213	145	2,015	2,295	4,310	177
1984/85	224	143	1,976	1,993	3,969	183
1985/86	240	111	2,133	2,047	4,180	177
1986/87	257	77	2,107	2,895	5,002	153

Source: (23).

Appendix table 23--Barley: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (1,000 tons)	5.8	5.9	6.5	7.0	6.6	6.7	7.2
Wholesale price ($/mt)	145.85	123.91	100.13	130.12	133.16	103.13	82.00
Consumer value	845.9	731.1	650.8	910.8	878.9	691.0	590.4
Policy transfers:							
Corn competitive	0.3	10.0	-4.8	0	1.8	0	0
Total transfers	0.3	10.0	-4.8	0	1.8	0	0
Unit transfers ($/mt)	0.05	1.69	-0.74	0	0.27	0	0
CSE (pct.)	0.1	1.7	-0.7	0	0.3	0	0

Appendix table 24--Corn: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (1,000 tons)	6.1	6.3	6.4	6.3	6.6	7.1	6.7
Wholesale price ($/mt)	184	150	154	193	175	146	129
Consumer value	1,122.4	945.0	985.1	1,217.5	1,155.1	1,033.8	864.3
Policy transfers:							
Tariff	-17.9	-17.6	-16.9	-15.6	-15.4	-15.6	-13.7
Total transfers	-17.9	-17.6	-16.9	-15.6	-15.4	-15.6	-13.7
Unit transfers ($/mt)	-2.93	-2.80	-2.64	-2.48	-2.34	-2.20	-2.05
CSE (pct.)	-1.6	-1.9	-1.7	-1.3	-1.3	-1.5	-1.6

Appendix table 25--Sugar: Consumer subsidy equivalent (CSE), Canada

Item	1980	1981	1982	1983	1984	1985	1986
				Million Canadian dollars			
Consumption (1,000 tons)	949	1,045	1,006	990	1,070	1,033	1,042
Retail price ($/kg)	1.64	0.91	0.79	0.92	0.77	0.68	0.70
Consumer value	1,556.9	950.9	794.7	910.8	823.9	702.4	729.4
Policy transfers:							
Tariff	-29.3	-32.2	-31.0	-30.6	-33.0	-31.9	-32.2
Total transfers	-29.3	-32.2	-31.0	-30.6	-33.0	-31.9	-32.2
Unit transfers ($/mt)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
CSE (pct.)	-1.9	-3.4	-3.9	-3.4	-4.0	-4.5	-4.4

Appendix table 26--Beef: Consumer subsidy equivalent (CSE), Canada

Item	1980	1981	1982	1983	1984	1985	1986
				Million Canadian dollars			
Consumption (1,000 tons)	986	1,030	1,039	1,039	1,009	1,030	1,051
Retail price ($/mt)	6,353	6,511	6,142	6,080	6,456	6,358	6,478
Consumer value	6,264.1	6,706.3	6,381.5	6,317.1	6,514.1	6,548.7	6,808.4
Policy transfers:							
Tariff	-54.3	-45.4	-45.8	-45.8	-44.5	-45.4	-46.3
Total transfers	-54.3	-45.4	-45.8	-45.8	-44.5	-45.4	-46.3
Unit transfers ($/mt)	-0.06	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
CSE (pct.)	-0.9	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7

Appendix table 27--Pork: Consumer subsidy equivalent (CSE), Canada

Item	1980	1981	1982	1983	1984	1985	1986
				Million Canadian dollars			
Consumption (1,000 tons)	753	733	687	713	701	723	708
Retail price ($/mt)	3,444	3,740	4,520	3,868	4,202	3,922	4,553
Consumer value	2,593.3	2,741.4	3,105.2	2,757.9	2,945.6	2,835.6	3,223.5
Policy transfers:							
Tariff	-8.3	-8.1	-7.6	-7.8	-7.7	-8.0	-7.8
Total transfers	-8.3	-8.1	-7.6	-7.8	-7.7	-8.0	-7.8
Unit transfers ($/mt)	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
CSE (pct.)	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.2

Appendix table 28--Poultry: Consumer subsidy equivalent (CSE), Canada

Item	1980	1981	1982	1983	1984	1985	1986
	Million Canadian dollars						
Consumption (1,000 tons)	516	516	523	531	557	600	629
Retail price ($/mt) 1/	2,556	2,984	3,000	3,270	3,683	3,502	3,802
Consumer value	1,318.8	1,539.8	1,568.9	1,736.4	2,051.4	2,101.3	2,391.8
Policy transfers:							
Quota/price support	-96.4	-193.9	-184.0	-145.4	-88.2	-38.6	56.7
Total transfers	-96.4	-193.9	-184.0	-145.4	-88.2	-38.6	56.7
Unit transfers ($/mt)	-0.19	-0.38	-0.35	-0.27	-0.16	-0.06	0.09
CSE (pct.)	-7.3	-12.6	-11.7	-8.4	-4.3	-1.8	2.4

1/ See appendix table 28.

Appendix table 29--Canada: Weighted consumer price for poultry

Year	Consumer price 1/		Consumption			Weighted price
	Chicken	Turkey	Chicken	Turkey	Total	
	----Can$/kg----		Pct. of total		1,000 mt	Can$/kg
1980	2.51	2.74	80.1	19.9	517	2.56
1981	2.99	2.96	80.4	19.6	516	2.98
1982	2.94	3.26	81.3	18.7	523	3.00
1983	3.23	3.44	80.9	19.1	530	3.27
1984	3.69	3.65	82.2	17.8	556	3.68
1985	3.43	3.86	83.2	16.8	600	3.50
1986	3.77	3.96	82.9	17.1	627	3.80

1/ Toronto price, 1980 and 1981, adjusted by CPI from 1982 price.
Source: (4).

Appendix table 30--Cheese: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (1,000 tons)	172	169	172	181	197	213	229
Retail price ($/kg) 1/	5.60	6.29	7.99	8.80	9.40	9.80	10.05
Consumer value	962.6	1,062.3	1,374.9	1,592.3	1,851.9	2,087.7	2,302.4
Policy transfers:							
Quota/price support	-227.1	-224.4	-271.8	-386.1	-485.3	-610.1	-647.8
Total transfers	-227.1	-224.4	-271.8	-386.1	-485.3	-610.1	-647.8
Unit transfers ($/mt)	-1.32	-1.33	-1.58	-2.13	-2.46	-2.86	-2.83
CSE (pct.)	-23.6	-21.1	-19.8	-24.2	-26.2	-29.2	-28.1

1/ See appendix table 31.

Appendix table 31--Weighted average cheese price

Year	Price		Share of consumption		Weighted price
	Cheddar	Process	Cheddar	Process	
	----Can$/kg----		----Percent-----		Can$/kg
1980	5.51	5.72	58.9	41.1	5.60
1981	6.29	6.28	58.8	41.2	6.29
1982	8.55	7.2	58.8	41.2	7.99
1983	9.74	7.64	55.1	44.9	8.80
1984	10.31	8.16	57.7	42.3	9.40
1985	10.73	8.24	59.4	41.6	9.80
1986	11.05	8.49	61.1	38.9	10.05

Source: (5, 6).

Appendix table 32--Fluid milk: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (mil. tons)	2.7	2.7	2.7	2.7	2.7	2.6	2.7
Retail price ($/kg)	0.72	0.83	0.87	0.91	0.99	1.05	1.06
Consumer value	1,944.0	2,241.0	2,349.0	2,457.0	2,673.0	2,730.0	2,862.0
Policy transfers:							
Quota/price support	-360.0	-362.4	-431.4	-578.2	-671.3	-751.8	-809.6
Fluid milk premium	-228.9	-243.6	-281.0	-272.8	-312.1	-343.3	-311.5
Total transfers	-588.9	-606.0	-712.4	-851.0	-983.4	-1095.1	-1121.1
Unit transfers ($/mt)	-218.11	-224.44	-263.85	-315.19	-364.22	-421.19	-415.22
CSE (pct.)	-30.3	-27.0	-30.3	-34.6	-36.8	-40.1	-39.2

Appendix table 33--Butter/SMP: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
				Million Canadian dollars			
Consumption (1,000 tons):							
Butter	107	107	110	108	107	103	98
Skim milk powder	132	111	113	124	111	106	99
Retail price ($/kg):							
Butter	3.97	4.52	4.92	5.22	5.51	5.53	5.70
Skim milk powder	4.35	4.57	5.11	5.56	6.07	4.13	4.25
Consumer value	999.0	990.9	1,118.6	1,253.2	1,263.3	1,007.4	979.4
Policy transfers:							
Quota/price support--							
Butter	-266.8	-268.3	-328.2	-432.7	-497.7	-557.1	-530.4
Skim milk powder	-136.8	-137.6	-168.3	-221.9	-255.3	-285.7	-272.0
Total transfers	-403.6	-405.9	-496.5	-654.6	-753.0	-842.8	-802.4
Unit transfers ($/mt):							
Butter	-2.49	-2.51	-2.98	-4.01	-4.65	-5.41	-5.41
Skim milk powder	-1.04	-1.24	-1.49	-1.79	-2.30	-2.70	-2.75
CSE (pct.)	-40.4	-41.0	-44.4	-52.2	-59.6	-83.7	-81.9

*U.S. GOVERNMENT PRINTING OFFICE:1988-201-089:80038/ERS

Appendix table 34--All dairy: Consumer subsidy equivalent (CSE), Canada

Item	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
	Million Canadian dollars						
Milk consumption (mil. tons)	7.5	7.7	7.7	7.6	7.6	7.3	7.6
Retail value	3,905.6	4,294.2	4,842.6	5,302.5	5,788.2	5,825.1	6,143.8
Policy transfers--							
Quota/price support	-990.7	-992.7	-1199.7	-1618.9	-1909.6	-2204.7	-2259.8
Fluid milk premium	-228.9	-243.6	-281.0	-272.8	-312.1	-343.3	-311.5
Total transfers	-1219.6	-1236.3	-1480.7	-1891.7	-2221.7	-2548.0	-2571.3
Unit transfers ($/mt)	-162.61	-160.56	-192.30	-248.91	-292.33	-349.04	-338.33
CSE (pct.)	-31.2	-28.8	-30.6	-35.7	-38.4	-43.7	-41.9